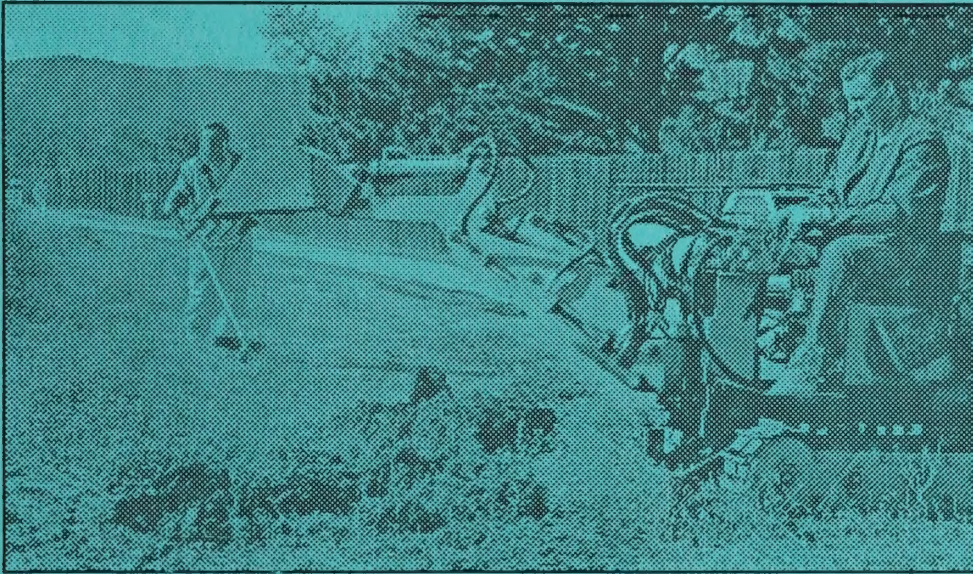


TRAIL MANUAL



For the Maintenance
and Operation of Trails
in the
East Bay Regional
Park District

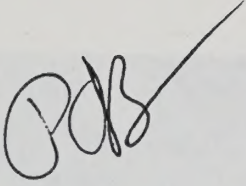




EAST BAY REGIONAL PARK DISTRICT

INTER-DEPARTMENTAL CORRESPONDENCE

DATE: February 21, 1996

TO: Jerry Kent
FROM: Pat O'Brien 
SUBJECT: Updated Trail Manual

Pursuant to Board Resolution No. 1996-2-43, I hereby give my approval to adopt the Trail Manual dated November, 1995 as the official District Trail Manual.

POB:ad

cc: Rachel McDonald

TRAIL MANUAL



A Manual for the Maintenance and Operation of Trails in the East Bay Regional Park District

Written and Compiled by Rachel McDonald
Assisted by Sally Cahill

Special Thanks to:
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Bob Evanhoe
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Nancy McKay
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A TRAIL MANUAL For the Maintenance and Operation of Trails in the
East Bay Regional Park District

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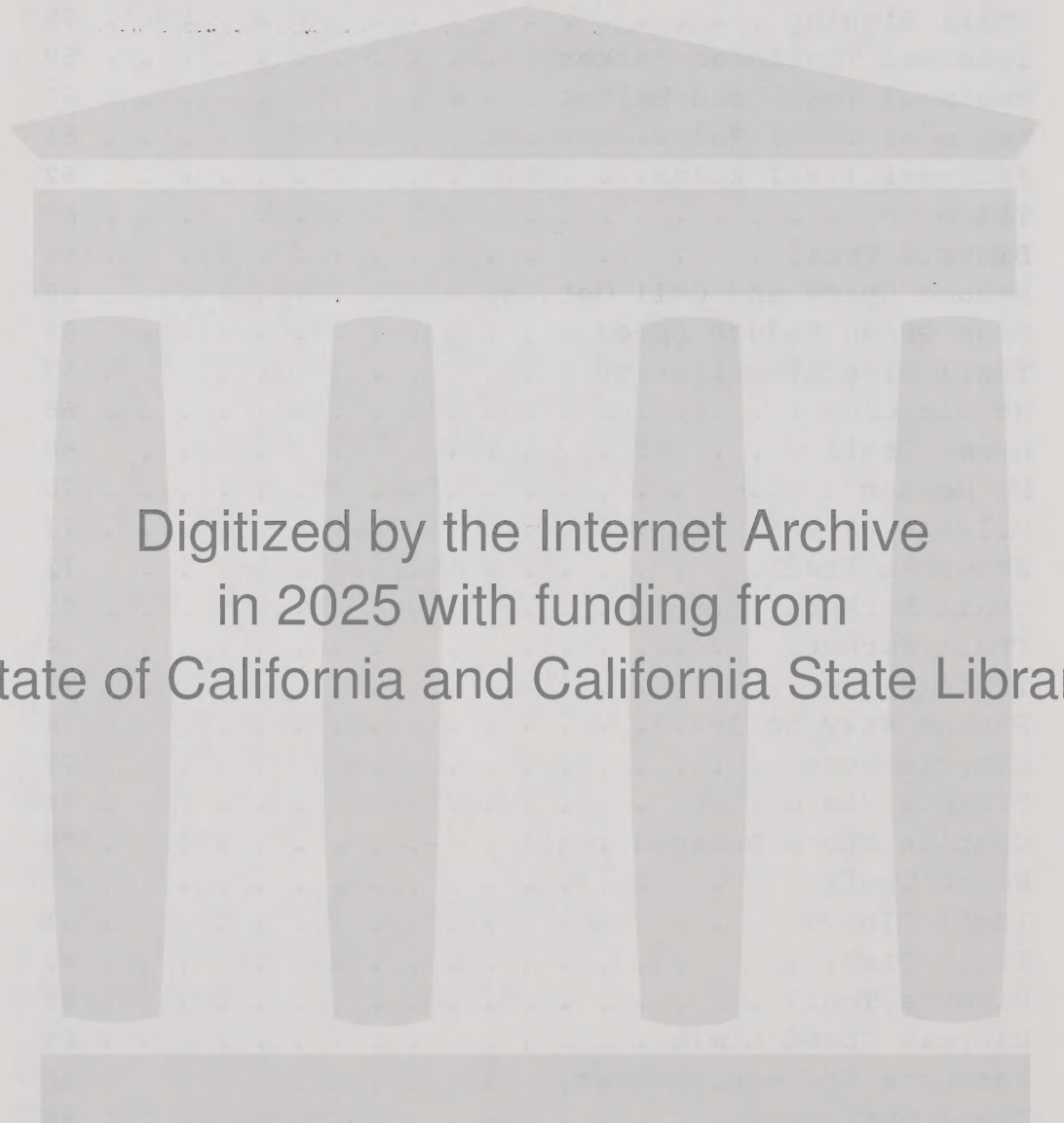
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INTRODUCTION

1. INTRODUCTION

1.1 TRAIL MANUAL OBJECTIVES

This manual was developed as a management and field tool for the maintenance and operation of all trails within the East Bay Regional Park District. It provides standards and guidelines for both the Park Supervisor and the park staff responsible for the maintenance and operation of existing trails. -However, no manual can adequately address all situations or individual conditions. Accordingly, it is anticipated that in some circumstances, actions in addition to, or instead of, those described in this manual will be undertaken by staff.

The manual was written and compiled with the assumption that it will be used primarily by field staff as a helpful supplement to their knowledge and experience, and that it will provide explanations and guidelines that will enable staff to operate more efficiently and be able to make informed decisions in the field.

An effort has been made to consolidate most District information related to trail maintenance and operation within this manual. Consequently, some information may appear redundant, such as the information and artwork that has been transferred from the District's Signing Manual.

1.2 TRAIL CATEGORIES

1.2.1 Regional Trail

A regional trail is a linear parkland in itself. Regional trails (also known as trail links for planning and management purposes) provide a linear corridor, in a natural setting where possible, that is primarily for pedestrian, equestrian, and bicycle use. Regional trails also provide links between parks, local trails, and urban communities. Regional trails may be paved multi-use, unpaved multi-use, hikers-only, or hikers/horses-only.

1.2.2 Internal Park Trail

An internal park trail is usually found within an established parkland. The most common types of internal park trails are unpaved multi-use and hikers/horses-only trails, although an occasional paved multi-use trail may be found (West Shore Trail at Lake Chabot, for example). Internal park trails that provide access to a regional trail are known as feeder trails. Special category trails are those that are commonly found at interpretive parks.

1.2.3 Types of Trails

1. Paved Multi-use Trail

A paved multi-use trail is generally a minimum of eight feet wide, although it may be constructed as wide as twelve feet.

Whenever feasible, there is a two foot gravel or aggregate base rock shoulder on each side of the pavement. Additional shoulder width may be provided for equestrian or other uses.

2. Unpaved Multi-use Trail

An unpaved multi-use trail, sometimes referred to as a service trail or fire road, is generally a minimum of ten feet wide. Most of these trails were in existence before the District was formed and were not constructed according to current District design standards. It has become the responsibility of District staff to maintain them as well as they can.

3. Hikers Only or Hikers & Horses Only Trail

This type of trail was developed for the use of hikers only or for hikers & horses only. It is unpaved. A trail is designated as a hikers only trail when a condition such as steepness makes it inappropriate for horses. The tread width has generally been determined by the amount and intensity of use, as well as by the topography and vegetation of the area. Tread width can be as narrow as one and a half feet and as wide as six feet.

MAINTENANCE

2. MAINTENANCE

2.1 STAFFING AND PROCEDURES

The maintenance and operation of an internal park trail are the responsibility of the Park Supervisor. Similarly, the responsibility for the maintenance and operation of each regional trail belongs to the appropriate Park Supervisor.

Maintenance and repair work may be performed by park crews, special crews, outside contractors, or by volunteers. On a regional trail, maintenance and repair work may be done by another public agency with whom the District shares responsibility for that trail. On any trail, when the work requires heavy machinery, or when there are not sufficient resources available for the park crews to complete the work themselves, the Park Supervisor may request maintenance assistance from the Roads and Trails crew, through the Work Request process.

2.2 TRAIL MAINTENANCE PRIORITIES

Trail work will be planned and implemented with the objective of providing for (1) visitor safety, (2) resource protection, and (3) public access.

Operating within budgetary and staffing constraints, the Park Supervisor's trail maintenance program should include:

1. Regular monitoring of each trail: the Supervisor will determine what is to be inspected and how frequently, and will establish a regular pattern of inspection.
2. Annual trail work aimed toward preventing serious damage.
3. Emergency repair work and/or signing to eliminate or to identify a possible safety hazard.

2.3 TRAIL MAINTENANCE GUIDELINES

The information given in this section is intended to be used as a guide, rather than as a strict formula for maintenance of trails.

A critical component of a trail maintenance program is systematic inspection. The Typical Patrol List that is included with the Guidelines for each type of trail is a model that may be, and likely will be, adapted and used by each Park Supervisor as is appropriate for the trails under that Supervisor's care.

A Park Supervisor with responsibility for a trail within a special category, such as levee, shoreline, delta, or interpretive trail, may use the appropriate Typical Patrol List, adding the items that are specific for that trail. For example, the list for a levee, shoreline, or delta trail would probably include items pertaining to the effects of wind and wave action and perhaps to the damage

caused by rodents. The brushing and treadwork guidelines for these types of trails may vary from the guidelines for other District trails. A patrol list for an interpretive trail could include a directive to check for exotic plant intrusion.

2.3.1 Guidelines for a Paved Multi-Use Trail

1. Vegetation on the sides of the trail should be pruned to allow passage, but should be preserved, as much as possible, to protect the aesthetic quality of the trail. Typically, vegetation is cleared to a height of seven feet to accommodate hikers, nine feet to accommodate bicyclists, and ten feet to accommodate equestrian use. Good pruning practices must be followed, including cutting branches almost flush with the limb, and cutting stumps at ground level or below. Large limbs should be pruned almost flush with the trunk.

Major pruning projects should be timed to avoid interfering with nesting birds.

Rare and/or unusual native plants should be given special consideration. Every effort should be made to avoid their removal.

2. Stolen, damaged, or obsolete signs should be replaced or repaired as soon as possible.
3. Damaged structures, fences, and gates should be repaired as soon as possible.
4. Corrective work for drainage or erosion should be done as appropriate. If this is not possible, and the Park Supervisor determines that it creates a safety concern, the area should be signed to inform trail users of the condition. A Park Supervisor considering trail closure should follow guidelines given in Section 3.2.
5. Paved surfaces should be cleared and cleaned when necessary to keep them free of loose gravel, broken glass, and other litter. A broom, a power sweeper, or a power blower may be used for this task. A section of trail that may constantly be cluttered with gravel or dirt should be signed to inform trail users of the condition, if the Park Supervisor determines that it creates a safety concern.
6. Painted graffiti on asphalt should be removed as soon as possible. This can be accomplished with either a graffiti remover or an asphalt sealer (such as Blackjack), which can be applied with a roller. Generally, it is not a good idea to use black traffic paint for this purpose because the graffiti may bleed through the paint, and the paint may make the paved surface slippery.

7. It is inevitable that pavement will become rough, cracked, or damaged over time. If the Park Supervisor determines that any distress may present a safety concern, the area should be signed to inform trail users of the condition. In some situations, the Park Supervisor may determine that pavement distress, such as cracking in the asphalt, is purely a maintenance item and does not present a safety concern. In either case, broken or damaged pavement should be repaired as soon as money and staff are available.

Crack Sealing - Asphalt and Concrete

Crack sealing is typically undertaken as a maintenance item in order to prevent water from getting into the base material. This is especially true on trails that have been built on expansive soils and on trails that have frequent use by heavy equipment, which may cause cracking on pavement. Depending upon the nature of the distress, either a cold or a hot crack sealing material will be applied to an area that has been cleaned of dirt and dust. In some situations, large cracks may need to be filled with an aggregate base rock, which should be compacted as much as possible before the area is cleaned of dirt and dust. The Roads and Trails Supervisor may be consulted in order to determine which type of crack sealing material is most appropriate for a particular job.

Asphalt Repair

Large sections of asphalt needing repair may be resurfaced with either hot mixed asphaltic concrete or with a surface seal. This work will generally be done by the Roads and Trails crew through the District's Work Request process or by an outside contractor through Design Division staff.

Concrete Repair

A concrete trail cannot be resurfaced. If a section of concrete trail needs to be replaced, the Park Supervisor may confer with the Roads and Trails Supervisor in order to determine whether the work should be completed by a District carpenter or by an outside contractor. This decision will be based on the type, severity, and extent of the damage.

8. To allow for safe access at standard regional trail entries, the distance between bollards should be 45 to 50 inches.
9. It is the District's policy to not stripe paved multi-use trails.

2.3.2 Typical Patrol List for a Paved Multi-use Trail

Surface: cracks/slumps in asphalt, erosion along edges, glass, gravel, dirt, or mud on trail, graffiti on asphalt, "STOP" stencils

Signs: legible, vandalism, graffiti, "STOP" sign, "STOP" stencil, and bar at each intersection, any signs missing

Mileage markers: legible, intact, accurate

Gates: proper swing, gate posts, hinges, stain/paint, reflector tape, locks, signs

Fences: lumber, hardware, stain, no breaks in woven field or barbed wire fence, graffiti, no unauthorized signs

Bollards: missing or damaged, stain, reflectors, hasps, locks, no unauthorized signs

Litter

Garbage cans: in good condition, change plastic liner if necessary

Trees/shrubs: pruned a minimum of 2' from trail edge, pruning needed, water needed, any dead or hazardous

Weeds/grass: mowing needed, weedeating needed

Culverts: unplugged, flowing properly

Benches: smooth surface, stain, vandalism, graffiti

Encroachment: by neighbors, contractors, or other agencies (ask to see permit)

Information panels: plexiglass clean and unscratched, free of graffiti and cobwebs, stain, brochure boxes full (including RID Cards), current information on boards

Bridges (foot/vehicle): foundation, rails/lumber, hardware, surface, graffiti

Drinking fountains: water flowing properly, draining properly, turn-off valve accessible and working

Retaining walls: structural integrity, lumber, hardware

Tunnels: graffiti, cobwebs, dirt along edges, lights

Non-dirt surfaces next to asphalt: holes/ruts, mowing needed, invasive weeds (puncture vine, yellow star thistle, artichoke thistle)

2.3.3 Guidelines for an Unpaved Multi-use Trail

1. Vegetation on the sides of the trail should be pruned to allow passage, but should be preserved, as much as possible, to protect the aesthetic quality of the trail. Typically, vegetation is cleared to a height of ten feet to accommodate equestrian use. Good pruning practices must be followed, including cutting branches almost flush with the limb, and cutting ~~stumps at ground level or below.~~ Large limbs should be pruned almost flush with the trunk. Dead and dying limbs and snags which may fall on the trail should be removed. Ground cover plants and low shrubs should not be removed except on the actual trail tread.

Where a trail is on a side slope, the vegetation on the uphill side will be more invasive and should be cut back more severely than vegetation on the downhill side.

Low-growing vegetation should be allowed to return to cut slopes to increase soil stability. Where appropriate, re-planting of cut slopes should be in conformance with land use plans and vegetation management plans of the park. Replant areas with vegetation indigenous to those areas or compatible with plantings already in place.

Major pruning projects should be timed to avoid interfering with nesting birds.

Rare and unusual native plants should be given special consideration. Every effort should be made to avoid their removal.

2. Stolen, damaged, or obsolete signs should be replaced or repaired as soon as possible.
3. Damaged structures, fences, and gates should be repaired as soon as possible.
4. Holes created when roots or rocks are removed will be filled and compacted with mineral soil and/or rock no larger than two inches.
5. Corrective work for drainage or erosion should be done as appropriate. If this is not possible, and the Park Supervisor determines that it creates a safety concern, the area should be signed to inform trail users of the condition. A Park Supervisor considering trail closure should follow guidelines given in Section 3.2.

Culverts, drains, and dips should be cleaned regularly, especially before the rainy season, during large storms, and as needed during the rainy season.

Debris should be removed from stream drainage upstream of culverts.

Unpaved multi-use trails should be patrolled during large storms, if possible, to ensure that drainage structures are functioning.

Pervious loose rock riprap checks should be installed in eroding road ditches. Rock should be of sufficient size that it will not wash downstream.

6. ~~Unpaved multi-use trails should be~~ graded annually, as deemed necessary by the Park Supervisor. Road grading will be done by the District's Roads and Trails crew or by an outside grading contractor. Park staff is responsible for identifying major necessary brush clearing and, if possible, will do the work in advance of the grading work. A member of the park staff will accompany the grader at all times, in order to clarify the work needed, help clear obstructions, and inform the operator of sensitive trail or park features to avoid. For more detailed information about grading considerations, see Section 2.3.5
7. The use of water bars is generally discouraged unless absolutely necessary. However, it is recognized that there are some trails within the District that would not last long were it not for the use of water bars.

Ideal water bar maintenance consists of installing a water bar that is self-maintaining. The angle of a water bar across the trail depends on the gradient of the trail, the amount of water or drainage area of the water bar, and the off-trail terrain. Typically, the angle is 15 to 40 degrees from a perpendicular line across the trail. Water bars at less than 15 degrees may dam up and require frequent maintenance. Water bars of more than 40 degrees may promote erosion and undercut the water bar rocks or log. The ideal drainage works somewhere in between, at a point where the flow of the water off the trail keeps the water bar clear of sand, soil, and debris.

An appropriate rule to determine the angle of a water bar across the trail is to begin with 15 degrees and add a degree for each percent of grade of the trail section. In other words, a trail of 15 percent grade would require a water bar at an angle of approximately 30 degrees.

8. To allow for safe access at standard regional trail entries, the distance between bollards should be 45 to 50 inches.

2.3.4 Typical Patrol List for an Unpaved Multi-use Trail

Surface: potholes, erosion

Gates (horse/vehicle): proper swing, gate posts, hinges, stain/paint, reflector tape, locks, signs

Fences: lumber, hardware, stain, structural integrity, no unauthorized signs

Motorcycle barriers

Bollards: missing or damaged, stain, reflectors, no unauthorized signs

Signs: legible, vandalism, graffiti, any signs missing

Mileage markers: legible, intact, accurate

Trail markers: legible, vandalism, disks intact

Trees/shrubs: pruning needed, water needed, any dead or hazardous

Weeds/grass: mowing needed, weedeating needed

Encroachment: by neighbors, contractors, or other agencies (ask to see permit)

Culverts: unplugged, flowing properly

Headwalls: clear to view

Garbage cans: in good condition, change plastic liner if necessary

Litter

Water bars: check for proper drainage when raining, remove water bars if not absolutely necessary

Swales: check for proper drainage when raining, make notes for spring grading

Retaining walls: structural integrity, lumber, hardware

Bridges (foot/vehicle): foundation, rails/lumber, hardware, surface, graffiti

Drinking fountains: water flowing properly, draining properly, turn-off valve accessible and working

2.3.5 Grading on an Unpaved Multi-use Trail

It is generally the responsibility of the Park Supervisor in charge of a trail to make decisions regarding the frequency and type of grading to be done on a trail. At times, it may be appropriate for the Supervisor to consult with the Roads and Trails Supervisor in order to make these decisions. The following information should be considered when making a determination about grading work.

Drainage is the most significant factor in minimizing trail damage and maintenance of District trails. Improper drainage design results in problems of two kinds: standing water, which may make trail surfaces slick, may cause surface failure allowing chuck holes and mud holes to develop, and may saturate uncompacted fill material and cause it to slide; and flowing water, which erodes trail surfaces and natural and artificial slopes (cut-and-fill banks) and carries loose soil particles and deposits them elsewhere. In dealing with drainage, it is necessary to understand the following characteristics of water flow:

1. Water flows downhill along the steepest (fastest) route available.
2. The faster water flows (the greater the velocity), the more cutting force it develops.
3. The more solid matter moving water carries, the more cutting force it develops.
4. The greater the volume of flowing water, the greater the cutting force it develops.
5. The greater the velocity and the greater the volume of flowing water, the more solid matter it can carry; effects 2, 3, and 4 tend to build on one another.
6. The slower the velocity and the greater the volume of flowing water, the greater the possibility for water to percolate into the soil.
7. As flowing water loses velocity, it drops the solid matter it is carrying.
8. Rapidly flowing water resists changing direction.

In general, the way to minimize water damage is with a trail design that sheds water rapidly, without permitting a build-up of velocity or volume. There are a number of standard means of diverting water from the trail surface:

1. Outsloping
Outsloping refers to the practice of tilting the trail surface down to the "outside" (the downhill or fill side of the trail). This encourages water to flow the short distance

across the trail, rather than along the trail length, thus reducing the opportunity for increased volume or velocity. For trails with a near level gradient, an outslope of 2 to 3% is generally sufficient to cause the water to drain straight across the width of the trail. Where the trail gradient is not nearly level, the flow path of the water will be a diagonal route across the trail, which varies with the degree of both gradient and outslope. As the gradient increases, outslping-must-also-increase-to-keep-the flow path as short and direct as possible. However, operational safety becomes a major concern for most vehicles when outslope reaches 15% (18 inches drop across a ten foot trail).

For outslping to be effective, the trail surface needs to be reasonably smooth. Even minor ridges, such as tire tracks or windrows left from grading, can cause the water to stand or flow along the trail length. The outside edge needs to be free of vegetation and obstructions (such as large rocks and stumps) which would prevent water from leaving the trail surface.

2. Crowning

Where the trail is on double fill, meaning fill on both sides, a variation of outslping called crowning may be used. In crowning, the trail surface is sloped downward to both sides from the center line. Crowning used to be common procedure, requiring elaborate drainage improvements on the uphill or ditch side of the trail. The practice makes little sense and should not be used unless outslping is impossible.

3. Ditching

Where outslping is impractical because of trail gradient or some other reason, or where the trail is in double cut so that outslping is impossible, water may be carried along the trail length for short distances in a ditch cut at the trail edge. The trail is sloped downward to the inside (uphill or cut side) of the trail. Water flows across the trail to the toe of the cut and is then carried either in a formal ditch or simply in the V formed by the junction of the trail surface and the cut bank.

For a ditch to work effectively, it needs to drop at a rate of 3% or greater. The water flowing in a ditch needs to maintain its speed at all times in order to prevent it from dropping the solid matter it is carrying and blocking the ditch. Therefore, a ditch should continue at the same gradient or become steeper, but should not flatten out. Because flowing water will tend to go straight rather than turn, ditches should not have sharp curves in them. A sharp turn will cause water to overflow the ditch or to erode the turn.

Obviously, ditches do present problems. Their use accumulates water, rather than dispensing it, greatly increasing the potential for erosion. As the ditch becomes steeper, water

velocity increases and with it the potential for erosion. Efforts to slow the water can result in an obstructed ditch with the water directed back onto the trail surface. To counteract the erosive force of the water, ditches can be lined with hard, non-erodible material, such as concrete or mortared stone. Such solutions are not practical in most District situations.

The best solution to ditch erosion problems is to keep ditches short and discharge the accumulated water away from the trail at frequent intervals. Sometimes small check dams can be placed in deeper ditches to halt erosion, but care must be taken to ensure they are not so high as to cause water to flow back onto the trail. Occasionally, topographical changes will cause cut to break into fill, allowing the water to escape down the hill. More commonly, the water will have to be carried across the trail in some cross-trail diversion structure in order to discharge it to the downhill side of the trail. Water can be diverted across the trail surface in a swale or under the surface through a culvert. In general, subsurface culverts are the preferred diversion system.

4. Culverts

Culverts are passageways to carry water under a trail. They are used both to pass ditch water under the trail and to carry the water across existing watercourses. Any culvert that crosses a natural stream channel may require a Stream Alteration Agreement from Fish and Game, and field staff should communicate with the District's Water Management Specialist in order to make that determination.

Culverts can be made of plastic, concrete, metal, stone, or other materials which can be made to support the trail and provide a non-erodible passageway. They may be of various shapes. They may be manufactured on-site, pre-fabricated and assembled on-site, or brought to the site finished and ready to be installed. The most common culverts, and the ones used almost exclusively in the District, are corrugated metal pipe (CMP) of circular cross section.

In selecting the appropriate culvert for a site, the two most critical characteristics are diameter, which governs the volume of the flow, and length. The Roads and Trails Supervisor may be consulted in order to determine the culvert size most appropriate for a particular situation. The size and type of headwall that may be built at the culvert inlet and outlet can help determine the length of the culvert. The Park Supervisor will decide whether headwalls will be constructed at either end of a culvert. The factors to consider in making this decision are:

- (a) The size of the culvert. A headwall is always needed when the culvert diameter is greater than 12 inches.
- (b) The type of soil. If the fill material over the culvert

is unstable or subject to erosion, a headwall is probably needed.

- (c) The rate of water flow expected.
- (d) The width of the water channel.
- (e) Whether the end of the culvert will be subject to damage and needs to be protected.
- (f) Whether the cost of the project will be significantly lower if a shorter culvert is used along with a headwall.
- (g) ~~Whether the size of the space for the project calls for a shorter culvert along with a headwall.~~
- (g) The aesthetics of the project appearance.
- (h) Whether the use of a flared end section on the culvert eliminates the need for a headwall.

Installing corrugated metal pipe (CMP) culverts includes furnishing, installing, and backfilling, and then constructing a satisfactory catch basin, a lead-off ditch at the outlet and perhaps headwalls at inlet and outlet ends of each culvert.

The pipe shall be bedded in a smooth, compacted earth foundation of uniform density shaped to fit the lower part of the pipe exterior for the full length. When a firm foundation is not found at the established grade, all unsuitable material should be removed below the flow line and replaced with aggregate base or other suitable material to form an adequate support for the pipe. Another method is to place geotextile fabric over unstable material once a bed has been established.

Culverts should be installed to follow the natural water-course, or have an excavated drain that will allow an unobstructed water flow. The percent of slope of an installed culvert pipe shall be greater than that of the inlet ditch to the culvert catch basin. The minimum culvert slope is 2%.

Culvert installation shall include the construction of an inlet with catch basin or inlet structure and an outlet with splash apron or rock energy dissipator that extends from the pipe a minimum distance equal to the diameter of the culvert. Materials excavated shall not be piled or diked along drains, but shall be used for backfilling around the culvert and trail tread. If free of organic matter, unsuitable material may be scattered on the ground away from drains.

Backfill material shall be placed in layers (not exceeding six inches) and thoroughly tamped on each side of the pipe. Backfill material within two inches of the pipe shall contain no rocks larger than two inches. Compacted backfill and leveling shall be at least six inches in depth over the pipe.

5. Swales

A swale is a permanent broad trough in the trail surface designed to carry water across the trail on the surface, rather than underground. Swales may be used to carry water accumulated in a ditch, or to assist surface drainage on steep

routes where out-sloping alone is inadequate. As a permanent installation, a swale must be designed to be walked, biked, and driven over safely and to endure regular grading without incurring damage.

The swale consists of a depression on the uphill side, with an embankment below creating a trough with a nearly flat bottom seven to ten feet across. The downhill embankment must rise at least one foot above the swale flow line. The slope of the uphill face of the embankment (dropping into the trough) must be sufficiently gradual for vehicles to clear the embankment top while driving across the swale; 2:1 or flatter. The bottom of the swale must drop at 3% to 5% as it crosses the trail. A swale should be aligned diagonally across the trail to provide for a smooth flow of water and to take advantage of the trail gradient to create the swale gradient. When using a swale to drain a ditch, the diagonal path will be absolutely necessary because the trail surface will be sloped inward to shed water into the ditch.

6. Water bars

Water bars serve the purpose of getting water across a trail quickly without creating gullies in the trail surface. A water bar consists of a ditch and an embankment across the trail surface; however, the ditch is not generally wider than a shovel-width, and the embankment approximately the same (rarely more than three feet in cross section). The embankment may be made of dirt, rock, or wood.

Occasionally, the need for additional drainage may be noted mid-winter, at which time a handmade water bar may be appropriate. It must be recognized that the water bar will be obliterated during spring grading, at which time a permanent drainage correction should be made.

Water bars make steering difficult. If it is necessary to drive over a water bar, it is imperative that the vehicle be eased over the bar at the lowest possible speed.

Water bars are not recommended for use on District trails unless they are absolutely necessary. However, it is recognized that there are some trails within the District that would not last long were it not for the use of water bars. If it is determined that the condition of a trail warrants the installation of water bars, consideration should be given to signing the trail to inform trail users of the condition.

2.3.6 Guidelines for a Hikers Only or a Hikers & Horses Only Trail

1. New vegetation growth should be cleared and obstructions removed when necessary. Vegetation on the sides of the trail should be pruned to allow passage, but should be preserved, as much as possible, to protect the aesthetic quality of the trail. Typically, vegetation is cleared to a height of seven feet to accommodate hikers and to a height of ten feet to accommodate equestrian use. Good pruning practices must be followed, including cutting branches almost flush with the limb, and cutting stumps at ground level or below. Large limbs should be pruned almost flush with the trunk. Dead and dying limbs and snags which may fall on the trail should be removed. Ground cover plants and low shrubs should not be removed except on the actual trail tread.

Where a trail is on a side slope, the vegetation on the uphill side will be more invasive and should be cut back more severely than vegetation on the down-hill side.

Vegetation should be allowed to return to the cut slopes to increase stability. Where appropriate, replanting of cut slopes should be in conformance with land use plans and vegetation management plans of the park. Replant areas with vegetation indigenous to those areas or compatible with plantings already in place.

Major pruning projects should be timed to avoid interfering with nesting birds.

Rare and/or unusual native plants should be given special consideration. Every effort should be made to avoid their removal.

2. Stolen, damaged, or obsolete signs should be replaced or repaired as soon as possible.
3. Damaged structures, fences, and gates should be repaired as soon as possible.
4. Corrective work for drainage or erosion should be done as appropriate. If this is not possible, the area should be signed to inform trail users of the condition. For more detailed information about drainage, see Section 2.3.5

Culverts, drains, and dips should be cleaned regularly, especially before the rainy season, during large storms, and as needed during the rainy season. These trails should be patrolled during large storms, if possible, to ensure that they are draining properly.

5. Tread maintenance may consist of:
 - (a) Restoration of uniform outsloped, insloped, or crowned surfaces.

- (b) Restoration to original width.
 - (c) Maintenance of backslope.
 - (d) Filling of ruts and holes in tread. Holes created when roots or rocks are removed will be filled and compacted with mineral soil and/or rock no larger than two inches.
6. Bootleg, or unauthorized, trails may be blocked with rock, brush, fallen timber, or the transplanting of live vegetation. In some extreme cases, it may be necessary to install temporary fencing or signing to prevent use. This decision will be made by the Park Supervisor.
7. The use of steps is generally discouraged unless absolutely necessary. Where feasible, switchbacks should be used rather than steps.
8. Switchback maintenance may consist of:
- (a) Reshaping the tread to the intended drainage.
 - (b) Cleaning the inboard ditch on the upper leg.
 - (c) Maintaining the tread on the landing between the upper and lower legs.
 - (d) Blocking and rehabilitating any shortcuts between the upper and lower legs.

Long, gradual switchbacks, rather than short, steep switchbacks should be used. Switchbacks are generally used on sideslopes of 30% or greater, and drainage is always a maintenance issue. For more information, see Section 2.3.5

9. Water bars are not recommended for use on District trails unless they are absolutely necessary. However, it is recognized that there are some trails within the District that would not last long were it not for the use of water bars. If it is determined that the condition of a trail warrants the installation of water bars, consideration should be given to signing the trail to inform trail users of the condition.

Ideal water bar maintenance consists of installing a water bar that is self-maintaining. The angle of a water bar across the trail depends on the gradient of the trail, the amount of water or drainage area of the water bar, and the off-trail terrain. Typically, the angle is 15 to 40 degrees from a perpendicular line across the trail. Water bars at less than 15 degrees may dam up and require frequent maintenance. Water bars of more than 40 degrees may promote erosion and undercut the water bar rocks or log. The ideal drainage works somewhere in between, at a point where the flow of the water off the trail keeps the water bar clear of sand, soil, and debris.

An appropriate rule to determine the angle of a water bar across the trail is to begin with 15 degrees and add a degree for each percent of grade of the trail section. In other words, a trail of 15 percent grade would require a water bar at an angle of approximately 30 degrees.

2.3.7 Typical Patrol List for a Hikers Only or a Hikers & Horses Only Trail

Trail bed: tread, erosion problems

Bridges: foundation, rails/lumber, hardware, surface, graffiti

Culverts: -unplugged, flowing properly --

Headwalls: clear to view

Weeds/grass: weedeating needed, poison oak encroachment

Trees/shrubs: pruning needed, any dead or hazardous

Rocks/roots: loose, tripping hazard

Signs: legible, vandalism, graffiti, 4"x4" directional posts, no flyers, no unauthorized signs

Trail markers: legible, vandalism, disks intact

Mileage markers: legible, intact, accurate

Gates: proper swing, gate posts, hinges, stain/ paint, reflector tape, locks, signs

Fences: boundary fence, entry fences, bollards, no unauthorized signs

Retaining walls: structural integrity, lumber, hardware

Water bars: check for proper drainage when raining, remove water bars if not absolutely necessary

Bootleg trails: block access if possible

Switchbacks: shortcuts, tread, drainage

2.3.8 Guidelines for a Trail Staging Area

1. Good pruning practices must be followed, including cutting branches almost flush with the limb, and cutting stumps at ground level or below. Large limbs should be pruned almost flush with the trunk. Dead and dying limbs and snags which may fall on the ground should be removed.

Major pruning-projects-should be-timed to-avoid interfering with nesting birds.

Rare and/or unusual native plants should be given special consideration. Every effort should be made to avoid their removal.

2. Stolen, damaged, or obsolete signs should be replaced or repaired as soon as possible. In paved parking lots, the sign and/or stencil for the disabled accessible parking spaces should be kept legible and in good repair.
3. Damaged structures, fences, and gates should be repaired as soon as possible.
4. Corrective work for drainage or erosion should be done as appropriate. If this is not possible, and the Park Supervisor determines that it creates a safety concern, the area should be signed to inform trail users of the condition. A Park Supervisor considering trail closure should follow guidelines given in Section 3.2.
5. Paved surfaces should be cleared when necessary to keep them free of loose gravel, broken glass, and other litter. A broom, a power sweeper, or a power blower may be used for this task.
6. Painted graffiti on pavement should be removed as soon as possible. This can be accomplished with either a graffiti remover or an asphalt sealer (such as Blackjack), which can be applied with a roller. Generally, it is not a good idea to use black traffic paint for this purpose because the graffiti may bleed through the paint, and the paint may make the paved surface slippery.
7. Parking stall striping should be inspected at least once a year, and the Park Supervisor will determine repair needs. Design Division staff may be consulted on current legal requirements for disabled accessible parking spaces.
8. It is inevitable that pavement will be broken, damaged, or cracked over time. If the Park Supervisor determines that any damage may present a safety concern, the area should be signed to inform trail users of the condition. In some situations, the Park Supervisor may determine that pavement damage, such as cracking in the asphalt, is purely a maintenance item and

does not present a safety concern. In either case, broken or damaged pavement should be repaired as soon as money and staff are available.

9. To allow for safe access at standard regional trail entries, the distance between bollards should be 45 to 50 inches.
10. Chemical toilets should be cleaned of graffiti as soon as possible. Cobwebs and litter should be swept out regularly. Paper product dispensers must be stocked. The seat area should be kept clean with disinfectant and water. Locking mechanisms should be kept in good working condition.

2.3.9 Typical Patrol List for a Trail Staging Area

Chemical toilets/restrooms: clean, paper products stocked, locking mechanisms in working condition

Litter

Garbage cans: in good condition, change plastic liners if necessary

Picnic tables: clean, smooth surface, stain, graffiti, vandalism

Benches: smooth surface, stain, vandalism, graffiti

Trees/shrubs: pruning needed, water needed, any dead or hazardous

Weeds/grass: mowing needed, weedeating needed

Gates: proper swing, gate posts, hinges, stain/paint, reflector tape, locks, signs

Bollards: missing or damaged, stain, reflectors, no unauthorized signs

Fences: lumber, hardware, stain, structural integrity, no unauthorized signs

Signs: legible, vandalism, graffiti, disabled accessible parking space striping and stencil, any signs missing

Drinking fountains: water flowing properly, draining properly, turn-off valve accessible and working

Information panels: plexiglass clean and unscratched, stain, free of graffiti and cobwebs, brochure boxes full (including RID Cards), current information on boards

Surface: potholes, dirt/glass, parking space striping, red curbs painted

Parking: legal parking, no vehicles for sale, no vendors, no commuter parking

Parking spikes: proper operation, vandalism

Telephone or emergency phone: proper 911 operation

2.3.10 Guidelines for Signing

1. For both the selection and the installation of signs along trails, the standards and guide-lines outlined in the District's Signing Manual will be followed by District staff.
2. As a safety measure, entry gates will have reflective tape and/or buttons affixed.
3. Signing decisions for exceptional situations will be made by the Park Supervisor and Unit Manager, in conjunction with the District's Sign Supervisor. When appropriate and/or necessary, the District Legal Counsel and the Risk Manager will be consulted.
4. The Typical Sign Installation and Removal Checklist is a model that may be, and likely will be, adapted and used by each Park Supervisor, as is appropriate for the trails under that Supervisor's care. It is an excellent tool for documenting signing activity.
5. For more detailed information on signing, see the TRAIL SIGNING section of this manual.

2.3.11 Typical Sign Installation and Removal Checklist

[illegible]

2.3.12 Typical Monthly Maintenance and Operations Schedule

The Typical Monthly Maintenance and Operations Schedule in this section was designed by a regional trails Supervisor. It is a model that may be adapted and used by each Park Supervisor, as is appropriate for the trails under that Supervisor's care.

SUMMER FOCUS (APRIL-THROUGH-SEPTEMBER) --

APRIL

1. Mowing and weedeating on all trails
2. Fence repair and replacement
3. Sign repair, rehab, and replacement
4. Information panel update
5. Projects
6. Bicycle Patrol
7. Contra Costa Juveniles

MAY

1. Mowing and weedeating on all trails
2. Fence repair and replacement
3. Sign repair, rehab, and replacement
4. Information panel update
5. Projects
6. Bicycle Patrol
7. Contra Costa Juveniles

JUNE

1. Mowing and weedeating on all trails
2. Fence repair and replacement
3. Sign repair, rehab, and replacement
4. Information panel update
5. Projects
6. Bicycle Patrol
7. Contra Costa Juveniles
8. Trail grading on unpaved trails
9. Posting of "NO FIREWORKS" signs

JULY

1. Mowing and weedeating on all trails
2. Fence repair and replacement
3. Sign repair, rehab, and replacement
4. Information panel update
5. Projects
6. Bicycle Patrol
7. Contra Costa Juveniles
8. Trail grading on unpaved trails
9. Asphalt repair
10. Remove "NO FIREWORKS" signs

Typical Monthly Maintenance and Operations Schedule
Page 2

AUGUST

1. Mowing and weedeating on all trails
2. Fence repair and replacement
3. Sign repair, ~~rehab,~~ and replacement - -
4. Information panel update
5. Projects
6. Bicycle Patrol
7. Contra Costa Juveniles
8. Trail improvement on unpaved trails
9. Asphalt repair

SEPTEMBER

1. Mowing and weedeating on all trails
2. Fence repair and replacement
3. Sign repair, rehab, and replacement
4. Information panel update
5. Projects
6. Bicycle Patrol
7. Contra Costa Juveniles
8. Trail improvement on unpaved trails
9. Asphalt repair
10. Drainage and ditch work as needed

OCTOBER

1. Mowing and weedeating on all trails
2. Fence repair and replacement
3. Sign repair, rehab, and replacement
4. Information panel update
5. Projects
6. Bicycle Patrol
7. Contra Costa Juveniles
8. Trail improvement on unpaved trails
9. Asphalt repair
10. Drainage and ditch work as needed

WINTER FOCUS (OCTOBER THROUGH MARCH)

NOVEMBER

1. Mowing and weedeating on all trails
2. Fence repair and replacement
3. Sign repair, rehab, and replacement
4. Information panel update
5. Contra Costa Juveniles
6. Culvert, water bar, and drain check (before it rains)
7. Assessment of storm damage and erosion on all trails
8. Pruning

Typical Monthly Maintenance and Operations Schedule
Page 3

DECEMBER

1. Information panel update
2. Contra Costa Juveniles
3. Culvert, water bar, and drain check
4. Assessment of storm damage and erosion on all trails
5. Pruning
6. Erosion work
7. Equipment maintenance for winter storage

JANUARY

1. Information panel update
2. Contra Costa Juveniles
3. Culvert, water bar, and drain check
4. Assessment of storm damage and erosion on all trails
5. Pruning
6. Erosion work
7. Projects
8. Posting of "STORM DAMAGE" signs as needed

FEBRUARY

1. Mowing and weedeating on all trails
2. Information panel update
3. Contra Costa Juveniles
4. Assessment of storm damage and erosion on all trails
5. Pruning
6. Erosion work
7. Projects

MARCH

1. Mowing and weedeating on all trails
2. Fence repair and replacement
3. Sign repair, rehab, and replacement
4. Information panel update
5. Projects
6. Bicycle Patrol
7. Contra Costa Juveniles

OPERATIONS

3. OPERATIONS

3.1 ONGOING HAZARD IDENTIFICATION

Throughout the year, field staff, in the course of routine patrol and maintenance duties, will identify and mitigate hazardous conditions. Often these hazards are mitigated immediately upon discovery. All identified hazards are generally documented by memorandum to the Park Supervisor. Hazards may also be identified and documented during the Annual Safety Tours, which are attended by the Park Supervisor, the Unit Manager, the Risk Manager, and the Chiefs of Parks and of Maintenance.

Identified hazards may be documented on a PARK OPERATIONS FIELD REPORT. This form may be used when the hazard is the result of a minor crime or incident in which no suspect or witness is known and there is no useful evidence for investigative follow-up. The form is used by both Park Operations and Public Safety personnel. It is helpful in documenting patterns of problems that may need to be addressed through changes in the maintenance and operation of a trail or attention from the Public Safety Special Enforcement Unit.

Any member of a park maintenance staff may submit a PARK OPERATIONS FIELD REPORT in order to report and document a problem. The Park Supervisor, after reviewing, signing, and distributing the report copies to the appropriate departments, will incorporate any necessary repairs or replacements into the daily work schedule. When the work has been completed, it will be documented in the staff's daily work log.

EAST BAY REGIONAL PARK DISTRICT				PARK OPERATIONS FIELD REPORT		1. CASE NUMBER	
2. TYPE OF REPORT						R	
☐ 488 PC — PETTY THEFT		☐ 374.3 PC — DUMPING		☐ LOST PROPERTY		LOSS VALUE OF PROPERTY OR COST TO REPLACE, REPAIR, OR CLEAN UP IS LESS THAN \$400.	
☐ 594 (b) (4) PC — VANDALISM		☐ DAMAGED PROPERTY		☐ FOUND PROPERTY			
3. DATE & TIME OCCURRED:			4. DATE & TIME DISCOVERED:		5. ESTIMATED LOSS VALUE/COST TO REPAIR/CLEAN:		
6. PARK:			7. LOCATION IN PARK:				
8. VICTIM: ☐ EAST BAY REGIONAL PARK DISTRICT ☐ EBRPD EMPLOYEE ☐ OTHER (LIST BELOW) ☐ UNKNOWN							
CODES FOR BOX #8: V = VICTIM RP = REPORTING PERSON DC = DISCOVERED CRIME							
9. CODE:	10. NAME: (LAST, FIRST, MIDDLE)		11. ADDRESS:			12. PHONE:	
13. DESCRIBE PROPERTY (STOLEN/LOST/FOUND) / DAMAGE TO PROPERTY / TYPE OF MATERIAL DUMPED:							
14. IDENTIFY ANY SAFETY/HEALTH PROBLEM WHICH MIGHT RESULT FROM THE LOSS/DAMAGE/DUMP:							
15. ANY WITNESSES? ☐ YES ☐ NO POSSIBLE SUSPECTS OR VEHICLE INFO.?							
IS THIS INCIDENT PART OF A SERIES? SIMILAR REPORTS W/IN 30 DAYS? ☐ YES ☐ NO IF "YES" IS CHECKED ON ANY QUESTION, A POLICE REPORT SHOULD BE FILED.							
16. REPORTING EMPLOYEE / RANGER / OFFICER:			17. DATE & TIME:		18. REVIEWING SUPERVISOR:		19. DATE:
☐ COPY TO RISK MANAGER BY _____							

Identified hazards may also be documented on a WORK REQUEST form and sent through channels to the Chief of Maintenance, who will assign it to the appropriate crew for completion.

WORK REQUEST FORM

1. Park or Facility:	2.
Area:	Emergency Maintenance/Repair New Work Special Requests

3. Description of Problems or Work Requested – Attach maps, drawings, and accurate dimensions

SAMPLE

4. Requested by: _____ Contact phone #: _____ Today's date: _____

5. Is there a "due date" for this work (ie. special event)? Please explain.

6. Budget Information

Is funding available for this request? Yes ☐

Fund Source: General Trails Other

001 ☐ 220 ☐ _____ ☐

Dept. & Object: _____

(Do not use Crafts/Maintenance division codes here)

Park/Facility has no funds available for this request. ☐

7. Approvals:

☐ Supervisor	☐ Manager	☐ Other	☐ Chief, Interpretation Chief, Park Ops.	☐ Chief, Crafts/Maintenance
_____	_____	_____	_____	_____

MAINTENANCE USE ONLY: Do not write below this line.

Instructions: _____

Field Notes: _____

Approved	Returned	Primary Responsibility	Completion Date	Completed By	Final Cost

3.2 TRAIL CLOSURE

3.2.1 Temporary Trail Closure

A Park Supervisor has the authority to temporarily close a trail or a section of trail in these situations:

1. Maintenance or construction is in progress.
2. A hazardous-condition-exists.
3. Very wet weather creates a hazard.
4. A high fire hazard exists in the immediate area.

The Park Supervisor will post appropriate signs to inform trail users of the closure. He/she will inform the Unit Manager, the Chief of Parks, Public Safety Dispatch, the Public Information Supervisor, and the Trails Specialist of the closure and its possible duration. The Trails Specialist may notify the East Bay Area Trails Council.

3.2.2 Permanent Trail Closure

A Park Supervisor may consider and recommend permanent closure of a trail in these situations:

1. There is a documented history of accidents or serious conflicts that cannot be corrected through design or regulation.
2. A particular type of use causes serious damage to a trail.
3. Certain types of use are fundamentally incompatible with the primary purpose of the trail/area.
4. Natural conditions or features present a serious, irremediable hazard to certain types of use.
5. Density of use, amount of use, or mix of uses exceeds carrying capacity of the trail.

The Park Supervisor will make the recommendation through the Operations Department's chain of command, beginning with the Unit Manager. The Unit Manager will initiate review of this recommendation by appropriate District staff, and it will be presented at a Parklands Operations meeting. The Unit Manager will initiate review of this recommendation by appropriate District staff, and it will be presented at a Parklands Operations meeting. As part of this process, District staff will attempt to inform interested trail user groups, such as the East Bay Area Trails Council, of proposed changes. The final decision about permanent trail closure will be made by the Board of Directors, after review by the Board Operations Committee.

3.3 WHOLE PARK ACCESS

Whole Park Access is an extensive, multi-faceted program aimed at making District parklands and trails accessible to users of all abilities. The foundation of the program is the comprehensive Whole Park Access Study (available from the Design Division), which

includes an evaluation of current levels of access to existing park facilities, recommendations for accessibility improvements, and an evaluation that defines accessibility in terms of physical characteristics of a site (slopes of paths, surface materials, and other structural features).

The study is also utilized when incorporating policies for accessibility into the park planning process; this procedure ensures the long-range planning and development of accessible facilities within existing parks and trails. The Whole Park Access program also includes awareness training for staff and specific projects designed to enhance accessibility on internal and regional trails.

Because their paved surface and transportation potential provide an attractive option for people using wheelchairs or crutches, paved or other hard-surfaced multi-use trails are emphasized as priorities for accessibility improvements. Where this type of use on a trail is expected, design of bollards and other features should factor in all accessibility considerations. Newly constructed trails shall be designed for accessibility to the extent that the limitations of the site will allow. Accessibility improvements on existing trails shall be performed as funding and staff become available.

3.4 PUBLIC RELATIONS

3.4.1 Brochures and Maps

Generally, trailheads of internal trails and regional trails shall be stocked with brochures prepared by the Public Affairs Department. They are usually supplied in a brochure box posted on an information panel. In some situations, there will be only one map at a trailhead or staging area, posted on the information panel.

Trail maps shall provide information such as routes, rules, mileage, and disabled accessibility. Trails and roads are designated by the following symbols:

————— Paved Multi-use

- - - - - Unpaved Multi-use

..... Hikers Only

..... Hikers & Horses Only

————— Paved Road

▲ Regional Trail (The triangle symbol will be used with appropriate line, designating the trail usage type.)

These symbols are being incorporated into District brochures as the maps are being updated.

The Park Supervisor, Unit Manager, Trails Specialist, and other related personnel shall review all brochures for a particular park or trail before printing or revision.

3.4.2 Citizen Groups

The District will work with interested trail user groups and solicit their support and review of the trails program. User groups are encouraged to help in the planning, design, maintenance, and publicity of internal and regional trails. One example of such an active group is the East Bay Area Trails Council.

3.4.3 Reservations and Special Events

A group making a request for a major trail-related event, such as a competitive equestrian ride, a bicycle rodeo, or a disabled persons event, should contact the Administrative Analyst in charge of special events. If an individual or a trail user group wishes to reserve a camping site, arrangements must be made through the Reservations Office.

3.4.4 Appeal Procedure

Maintenance and operational problems encountered by trail users shall be referred to the appropriate Park Supervisor. In the event that an individual or group is not satisfied with District cooperation, procedure, or facilities, and after reasonable attempts to resolve the problem with immediate park staff, the following appeal procedure shall be followed:

1. Problems relating to existing trails (internal or regional) shall be presented to the appropriate Unit Manager and then to the Chief of Parks for review and action.
2. Problems relating to proposed regional trails shall be presented to the Trails Specialist, the Trails Coordinator and the appropriate Unit Manager for review and action.
3. Problems unalleviated by the above actions shall be presented to the appropriate Assistant General Manager, who will coordinate with staff from other departments to determine a course of action.

3.4.5 Encroachments

Field staff, particularly those on regional trails, may frequently have to deal with encroachment issues. The District's encroachment policy is detailed in the "Good Neighbor Guidelines," passed by the Board of Directors on April 6, 1993 in Resolution 1993-4-82.

1. Authorized Encroachments

The District often receives requests from trail neighbors and/or contractors for access through a trail corridor. These requests may be for various purposes, such as to make a delivery, to clean a pool, or to do construction, tree, or bank stabilization work. The process for considering these requests, and for issuing encroachment permits, is administered by the Maintenance Division's Administrative Analyst.

2. Unauthorized Encroachments

Field staff may encounter unauthorized encroachments onto property that is owned and/or operated by the District. Generally, any structural encroachment, such as the construction of a fence or shed, shall be referred to and handled by the Maintenance Division's Administrative Analyst. Other encroachments, such as the dumping of clippings, the planting of trees and shrubs, or the posting of unauthorized signs, shall be handled by the Park Supervisor.

The following is a sample letter that may be adapted by a Park Supervisor to deal with trail neighbors and encroachment issues.

Dear Trail Neighbor:

We need your help to be sure that yard refuse and trimmings are not dumped onto park trails. Disposal of branches, clippings, or other debris is not acceptable. Although the trash is organic matter, its accumulation causes several problems. It greatly increases the work and therefore the cost of our trail crews. Because grass and clippings soon dry out, fire danger is also increased. A pile of refuse can also become a breeding ground for insects and rodents.

Dumping refuse of any kind is a violation of East Bay Regional Park District's Ordinance 38 and can be cause for citation by any Park District Public Safety Officer. The violator will be fined by the court and required to pay the cost of cleanup. If you know of any violators, please inform them of the consequences of their actions.

East Bay Regional Park District tries to provide the public with well-maintained, inviting trails for the enjoyment of everyone. As your neighbor and steward of your parks, we welcome your use and also your support of these public lands.

If you have any questions about our trail operations, please contact me at [phone number].

Sincerely,

[Name]
Park Supervisor
[Park]

3.5 VOLUNTEERS

The District's Volunteer Coordinator, working out of the Operations Department, organizes volunteers to perform trail construction, tree planting, gardening, and cleanup work. Other District departments also become involved for occasional special projects: the Land Acquisition Department for Trail Days and other trail events, the Public Affairs Department for Coastal Cleanup and Arbor Day, and the Stewardship Division for various other projects.

Volunteer assistance is appropriate for, but should not be limited to, labor-intensive jobs that cannot be completed entirely by regular park staff. Resource protection projects, such as obstacle removal, education assistance, and stewardship work, should be considered whenever possible. Under staff supervision, they may build retaining walls, monitor trails for adverse conditions and perform many trail maintenance tasks. Volunteers may not drive District vehicles, operate heavy machinery, use any power tool or equipment, or fill a job vacated, for any reason, by paid staff.

Volunteers have employee status, inasmuch as they are entitled to Workers Compensation insurance. Very specific procedures, as described in the Volunteer Manual, must be followed to ensure this. Many different categories of volunteers and volunteer groups are utilized by the District. Trail user organizations for hikers, bicyclists, and equestrians (such as Bay Area Ridge Trail Council) are among the special interest groups that donate volunteer services. Other volunteer community groups may include service organizations, scout troops, church groups, and high school clubs. Corporate sponsors also lend support by offering compensation and benefits to employees who work on various environmental projects.

3.5.1 Parks Partners

Parks Partners is a program of the East Bay Regional Park District, in cooperation with the Regional Parks Foundation, which encourages volunteers to become actively involved in our regional parks in both counties. The Parks Partners program helps unify volunteers throughout the District. The volunteers support the District parks by working on projects such as trail and staging area restoration, providing interpretive assistance, raising funds, and assisting with District events.

A Partners volunteer may donate a few hours or many more of service, depending on personal availability as well as on the requirements of specific Partners projects. Generally, previous experience is not necessary, although some Partners groups may require it for special projects. Some Partners groups charge a nominal fee for membership.

Parks Partners Adopt A Trail programs were initiated throughout the District in February of 1993. These provide an opportunity for interested park users to volunteer to work with park staff on trail development and rehabilitation. These people can volunteer on an

individual basis or as part of a group. When working with individuals, park staff will generally wait until there are enough volunteers to form a group to work with Ranger supervision, keeping the Ranger/volunteer ratio around 1:5. When working with organized groups, park staff will train the leader, allowing one trained leader for every five volunteers.

The Adopt A Trail Program has been expanded to include the Ivan Dickson Trail Program. This program was created as the result of a generous estate donation by Ivan Dickson, a past member of the Berkeley Hiking Club, and it involves the active participation of both District staff and volunteers. Volunteers may be individuals, groups, or organizations. Activities include "Mini Trail Day" projects, a series of trail maintenance workshops, and other trail-related activities, such as event and project planning.

The funds from the donation and from future donations to the program will be invested in an interest-bearing account and will augment Trails Assessment District funding and help support the purchase of tools, materials, and staff support for the volunteer efforts. District staff interested in participating in this program should contact the District's Volunteer and Community Resources Coordinator and should direct interested trail users to do the same.

More detailed information about volunteer programs may be obtained by contacting the District's Volunteer and Community Resources Coordinator or by consulting the District's Volunteer Manual.

3.6 COMMUNITY RESOURCES

In order to provide alternative sources of labor from the community for our parks and trails, the District has operating agreements with various agencies and organizations.

1. Work Alternative Program (Contra Costa County)
Through an agreement with the Contra Costa County Sheriff's Department, we are assigned people from their Custody Alternative Bureau to work with our WAP Supervisor in District parks within Contra Costa County.
2. Work Alternative Program (Alameda County)
Through an agreement with Alameda County Sheriff's Department, we are assigned people from their Work Furlough Center to work with our WAP Supervisor in District parks within Alameda County.
3. Workfare (Contra Costa County)
In cooperation with the Contra Costa General Services Department, the Workfare Supervisor directs crews on work projects within our parklands in Contra Costa County. Each crew is comprised of unemployed laborers accompanied by a county crew leader.

The crews listed above are able, under supervision, to do various types of work, including demolition and debris cleanup, tree planting, trail brushing, erosion control work, and fence, picnic table, and retaining wall construction. Park Supervisors should send job requests directly to the appropriate Program Supervisor.

4. Juvenile Community Service Program (Contra Costa County)
The JCSP has been operated by the Contra Costa County Probation Department since 1969. The crews are comprised of young male and female offenders who are required by the Juvenile Court or a Probation Officer to work a specified number of weekend days on a community work project. Each crew consists of six to ten people and is supervised by a specially trained counselor. Technical guidance is provided as needed by park staff. The type of work done by these crews includes litter pickup, weed abatement, and fire clearances.
5. California Conservation Corps (CCC)
The CCC crews work very well on trail projects and general maintenance work; however, with guidance they can be used to do more sophisticated work, such as installation of irrigation systems, fence construction, or rock work. They also have special crews that are available on short notice in case of emergencies such as oil spills, earthquake damage, or wind-storm damage.
6. East Bay Conservation Corps (EBCC)
The EBCC works out of Oakland. Under the guidance of District staff, EBCC crews do trail construction and maintenance tasks, including vegetation removal, erosion control, grading, and technical construction. They can also work on demolition and debris cleanup projects and do limited fencing.

No-fee, short-term project (STP) crews from the Conservation Corps are also available on a periodic basis throughout the year. The no-fee groups are usually comprised of entry-level, orientational workers with no prior experience, and are thus placed on less complicated projects. The STP crews frequently perform maintenance work and occasional construction and rehabilitation work on District trails.

More information about community resources may be obtained by contacting the District's Volunteer and Community Resources Coordinator or by consulting the District's Volunteer Manual.

3.7 PUBLIC SAFETY - POLICE DIVISION OPERATIONS

3.7.1 Special Enforcement Unit

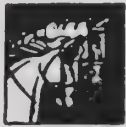
The District Police Division has primary policing responsibility throughout all District parks and trails. The Special Enforcement Unit (SEU) of the District's Police Division employs intensive staff power, intermodal transportation (including horses and bicycles), and surveillance equipment in order to conduct

undercover work and other special investigations on trails with demonstrated special needs.

3.7.2 Volunteer Trail Patrols

The SEU oversees the Volunteer Trail Patrols, groups of citizen volunteers that contact trail users and distribute RESPONSIBLE TRAIL USE RULES cards, in order to promote responsible trail use and reduce trail conflicts. These patrols work in an (a) observe, (b) report, and (c) educate mode. They field questions from the public, disseminate information to trail users, and report acquired knowledge of trail problems and problem areas to the Special Enforcement Unit and park staff.

CALL trail hotline:
(510) 733-6991
to report trail incidents.
For incidents requiring immediate
Police response, phone (510) 881-1833.



**Metropolitan Horsemen's Association
Bicycle Trails Council**



EAST BAY REGIONAL PARK DISTRICT

Responsible Trail Use Rules

- Be safe, considerate and aware of your impact on the park and other trail users.
- Keep to the right. Go single file around blind curves.
- Use authorized trails only; respect trail closures.
- Bicycles are **not** permitted on single track trails, either walked or ridden, or on any other trail marked "No Bicycles."
- Bicycles shall not be ridden at unsafe speeds or exceeding the posted speed limit. On blind turns, **SLOW DOWN**, ring bell and ride single file.
- Bicycles yield to pedestrians; **STOP** for equestrians. **SLOW DOWN**, establish verbal contact and ring bell when approaching either.
- Dogs must be on leash in staging areas and where posted, and be under full verbal control elsewhere.

If a Park Supervisor wishes to request a patrol for a specific park or area, he/she should contact the Special Enforcement Supervisor or the appropriate Volunteer Patrol Coordinator. Patrollers should notify Dispatch prior to going out on trails. The following is the typical chain of command that is followed in order to get information acquired from the patrols to the Park Supervisor: Patroller, Patrol Area Manager, Volunteer Patrol Coordinator, Special Enforcement Supervisor, and Park Supervisor. The Volunteer Trail Patrol program consists of bicycle, equestrian, and hiking patrols.

1. Volunteer Bicycle Patrol (VBP)

Under the coordination of the SEU, the 75 authorized members of the VBP conduct trail patrols by bicycle and assist with various special events. They monitor Ordinance 38 violators in particular, and are able to address concerns specific to

bicyclists. The patrollers distribute Responsible Trail Use Rules cards to trail users. This card lists rules combining law and common courtesy which describe safe and responsible trail behavior, promoting an enjoyable experience for all user groups. The VBP cooperates with Park Operations staff in bicycle bell give-aways to promote trail safety and also holds a number of events each year. During these events, VBP members staff checkpoint tables set up at trailheads and staging-areas. The members distribute literature and answer questions. All bike patrollers should be wearing numbered bibs and carrying their VBP identification cards.

Volunteer Bicycle Patrol members are not allowed on hikers only or hikers & horses only trails except at the direction of the SEU Supervisor on the Volunteer Bicycle Patrol Coordinator, and only for search and rescue situations. It is made very clear to the bike patrollers that if they are caught on these trails without permission, either on or off their official patrols, they will be terminated from the VBP.

If staff sees a bike patroller on one of these trails, he/she should get the patroller's name or bib number and report it to the SEU Sergeant or the officer in charge of the VBP.

2. Volunteer Mounted Patrol (VMP)

The 40 members of the Volunteer Mounted Patrol distribute Responsible Trail Use Rules cards while conducting equestrian patrols. The group has rigorous membership requirements. Each patroller must attend meetings and training sessions, work a minimum number of hours per month, and obtain and maintain certification for his/her mount. In addition to conducting trail patrols, the VMP, under the direction of the District's Equestrian Officer, provides assistance at dedications and special events.

3. Trail Safety Patrol (TSP)

The 50 members of the Trail Safety Patrol distribute Responsible Trail Use Rules cards while conducting trail patrols on foot. The group also assists with bicycle, equestrian, and running events. The TSP cooperates with Park Operations staff in bicycle bell give-aways to promote trail safety and also holds a number of events each year. During these events, TSP members staff checkpoint tables set up at trailheads and staging areas. The members distribute literature and answer questions.

3.7.3 Policies and Ordinances

1. Public Safety Operational Policy

The District will provide for the safety and protection of parkland users and staff and for the protection of the natural resources, structures, and facilities. This public safety responsibility will include police, fire, and lifeguard services.

2. Ordinance 38

Ordinance 38 is the compilation of laws, approved by the District Board of Directors, that govern conduct in District parklands. The following sections of Ordinance 38 contain bicycle and trail policies relevant to trail usage and users:

SECTION 200	GENERAL REGULATIONS
SECTION 407	UNACCEPTABLE CONDUCT
SECTION 409	MISCELLANEOUS DANGEROUS ACTIVITIES
409.8	BICYCLES
SECTION 600	PARK USES - RIDING/HIKING TRAILS
SECTION 601	SADDLE ANIMALS
SECTION 602	GATES
SECTION 603	TRESPASSES
SECTION 801	ANIMALS - PET RESTRICTIONS

All of Ordinance 38 is reviewed annually.

3.7.4 Trail Safety, Etiquette and Other Information

1. Trail Safety Brochure

Advice for safe trail use may be found in the District's Trail Safety brochure. The Trail Safety brochure, available from Central Stores, is prepared by the Public Affairs Department, and shall be periodically reviewed and revised. It can be used in brochure boxes at trailheads and staging areas.

2. Report Incident Directly (RID) Card

The RID card is the SEU's response to concern that regular reporting systems have not provided a ready means for citizens to report continuing concerns or problems. The cards allow the Police to more efficiently and rapidly review incident reports, complaints, and crime reports, in order to identify patterns and potential suspects. The information is used to deploy police personnel and to assist investigators. The cards are intended to complement reporting procedures by increasing the record of incidents that may not be processed through the formal reporting methods. The Police Division encourages trail users to keep RID cards readily available in order to more rapidly report information. RID cards are available from Central Stores.



REPORT INCIDENTS DIRECTLY

YOU MAY USE THIS CARD TO REPORT TRAIL USE CONFLICTS. DO NOT USE IT TO REPORT AN EMERGENCY OR A CRIME THAT SHOULD BE INVESTIGATED IMMEDIATELY. IN AN EMERGENCY CALL **9-1-1**.

DELIVER TO: ANY EBRPD POLICE OFFICER
ANY EBRPD-PARK RANGER

OR MAIL TO: 17930 LAKE CHABOT ROAD
CASTRO VALLEY, CA 94546

TYPE OF REPORT (CHECK BOXES)

- ☐ PEDESTRIAN ☐ BICYCLIST ☐ EQUESTRIAN
☐ CLOSED TRAIL ☐ FAILURE TO RING BELL/ANNOUNCE APPROACH
☐ SPEEDING/RECKLESS OPERATION ☐ UNLEASHED/UNCONTROLLED DOG(S)
☐ OTHER _____

DATE _____ TIME _____ PARK _____

LOCATION _____

WHAT HAPPENED: _____

SUSPECT DESCRIPTION

SEX _____ RACE _____ AGE _____ HT _____ WT _____ COMP _____

HAIR _____ EYES _____ MUSTACHE _____ BEARD _____ GLASSES _____ HAT _____

CLOTHING _____

VEHICLE DESCRIPTION

YEAR _____ MAKE _____ COLOR _____ LICENSE _____

OTHER _____

OPTIONAL INFORMATION

NAME _____

YOU MAY CALL ME AT _____

6309078

3. Other Information

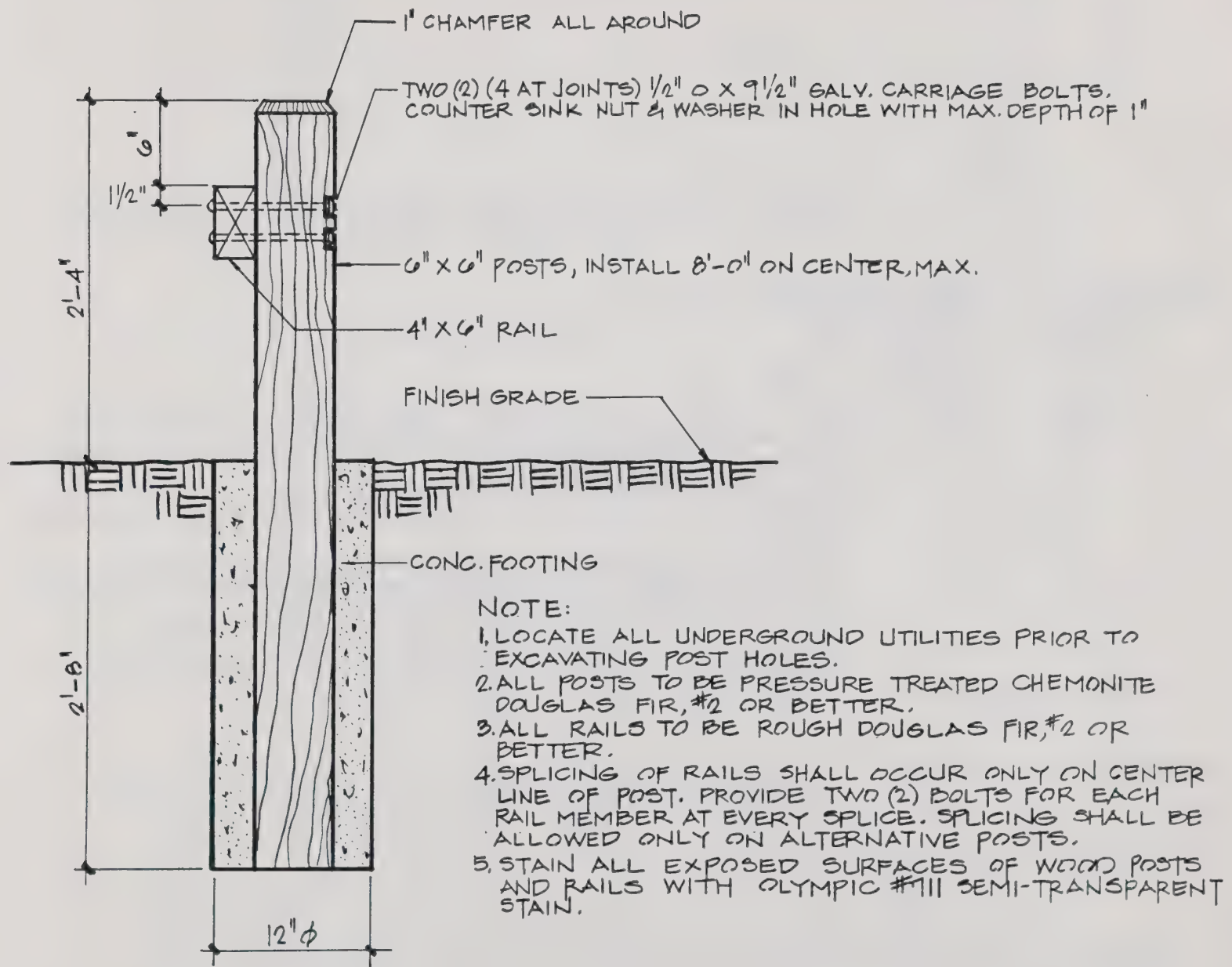
The Police Division has many other means by which trail users may acquire more information about crime prevention, safety, and trail etiquette. The Responsible Trail Use Rules card is available from the Special Enforcement Supervisor and is distributed by District staff in the field and by volunteer patrols located at checkpoints throughout the parks. In addition to distributed literature, education programs on trail etiquette are occasionally sponsored by special interest groups. More information may also be obtained by contacting a patrol volunteer or a Police Officer directly. Trail use conflicts may be reported to the Park Supervisor or directly to the District's Police Division.

District Staff Referred to in this Manual (November 1995)

All but Work Program Supervisors may be reached at 635-0138.

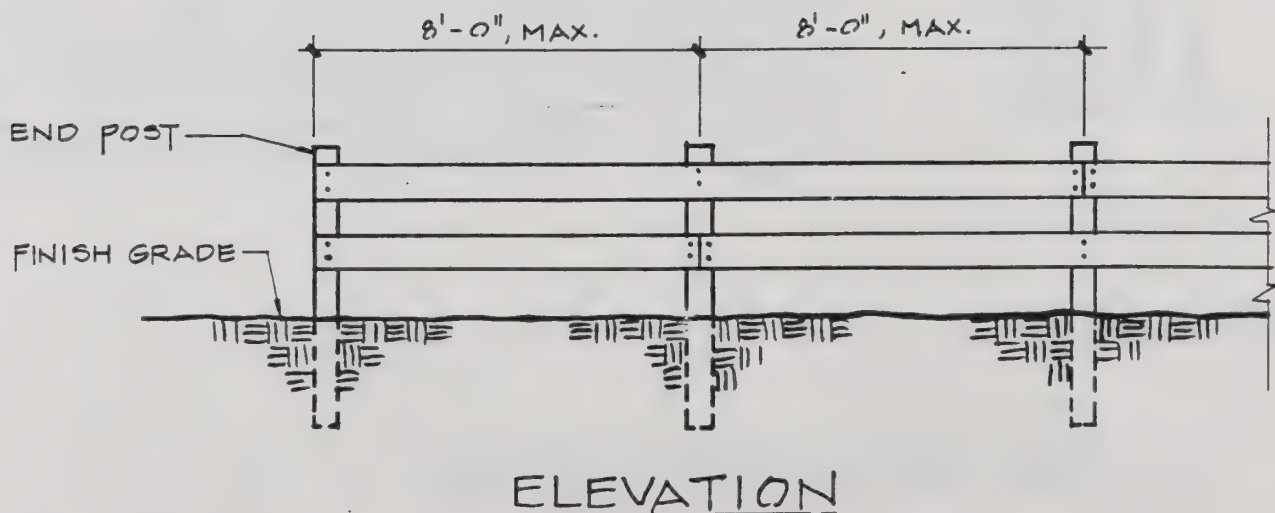
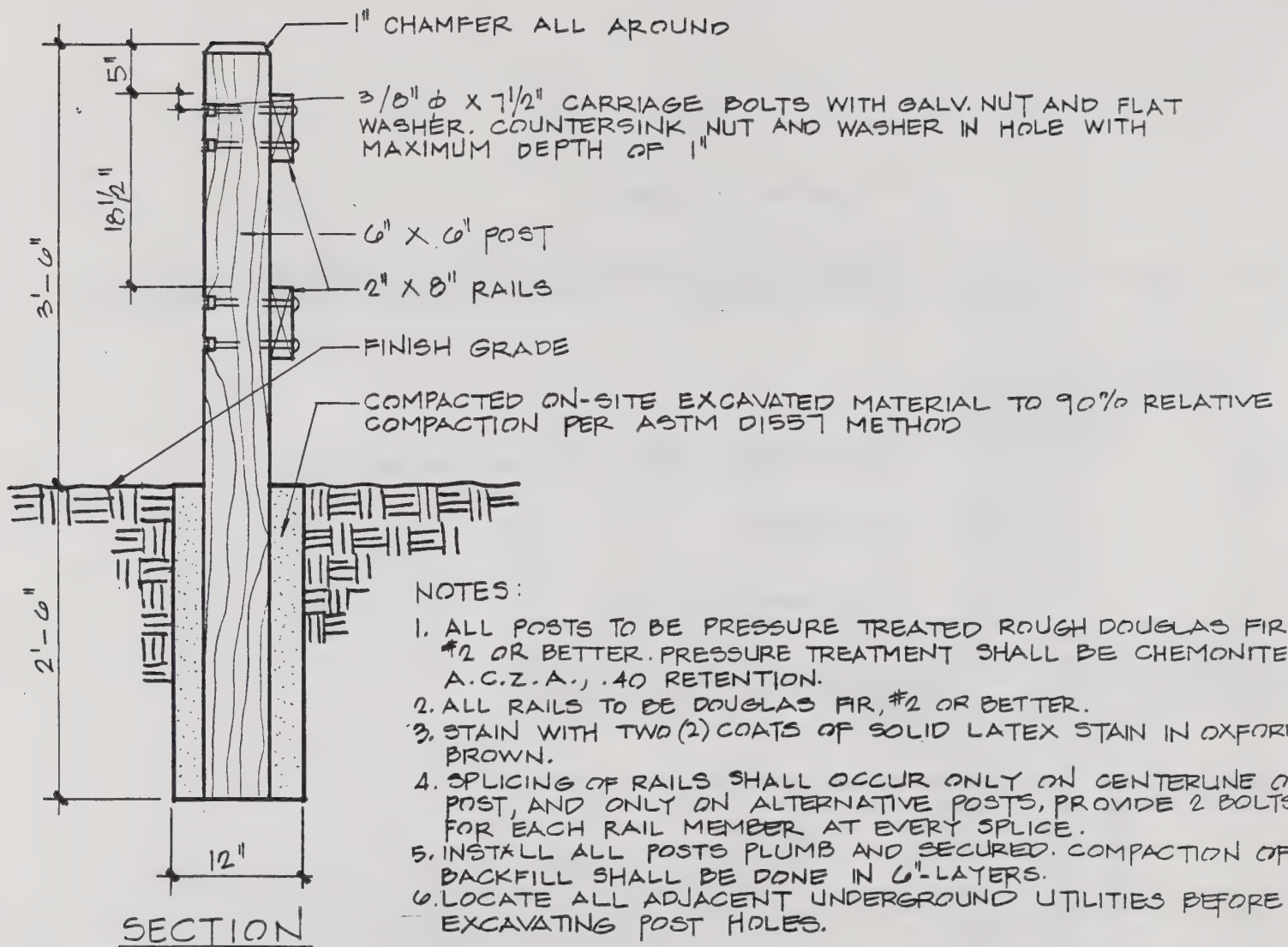
		<u>Extension</u>
Assistant General Manager of Operations	Jerry Kent	2501
District Counsel	Ted Radosevich	2004
Chief of Parks	Steve Jones	2511
Chief of Maintenance	Bob Evanhoe	2561
Risk Manager	David Clovis	2157
Trails and Community Resources Unit Manager	Rachel McDonald	2532
Trails Specialist	Steve Fiala	2602
Trails Coordinator	Bob Bouska	2609
Maintenance Department's Administrative Analyst	Nancy Schley	2562
Roads and Trails Supervisor	Don Goodenow	2567
Sign Supervisor	Steve Myli	3221
Volunteer and Community Resources Coordinator	Kathleen Fusek	2515
Public Information Supervisor	Ned MacKay	2208
Administrative Analyst for Special Events	Mark Ragatz	2540
Water Management Specialist	Ken Burger	2341
Special Enforcement Supervisor	Larry Kiefer	3122
<u>Work Program Supervisors:</u>		
Work Alternative Program (Alameda County)	Elias Hernandez	247-0680
Work Alternative Program (Contra Costa County)	Louis Guzman	937-8721
Workfare (Contra Costa County)	Joe Britton	372-5364

DESIGN DETAILS

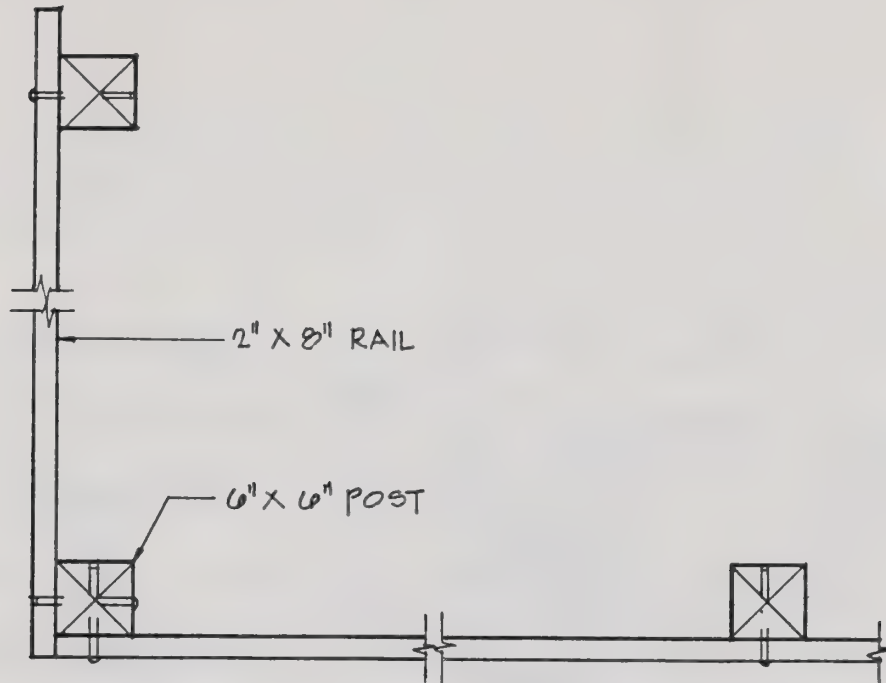


SECTION

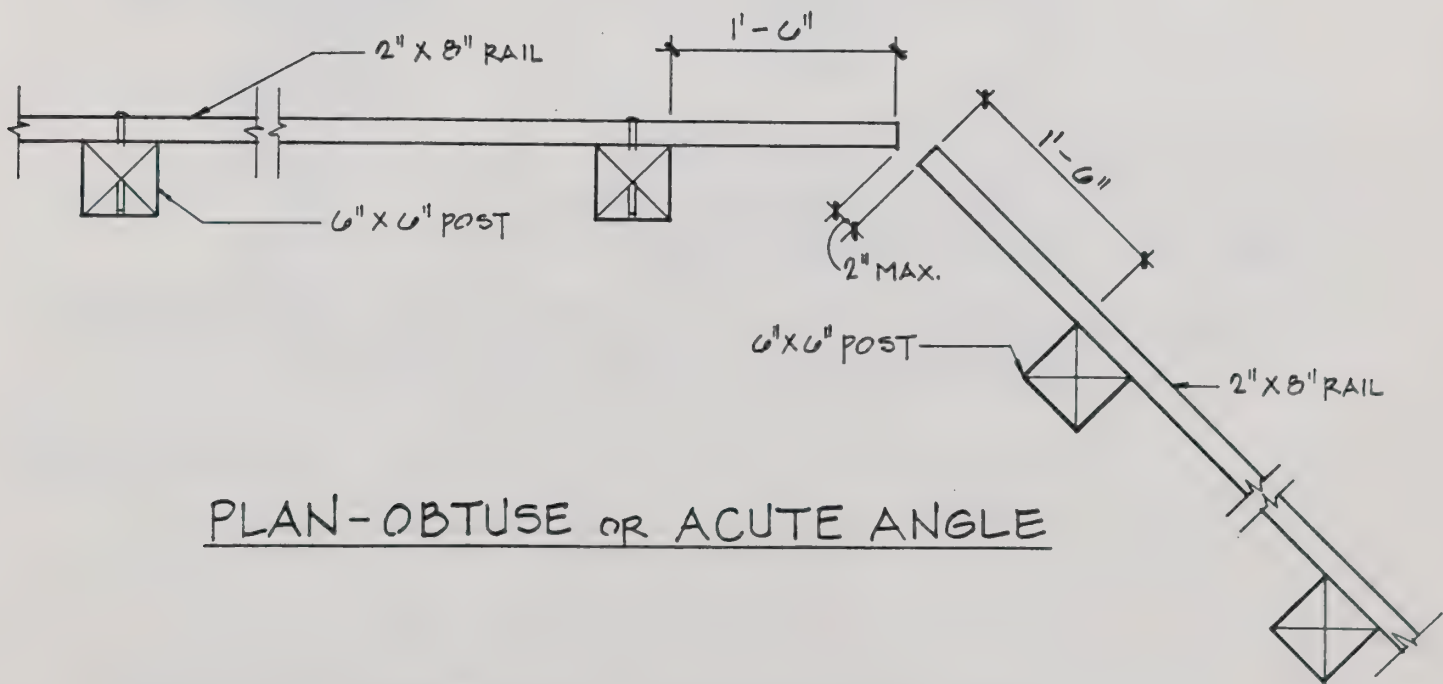
ONE RAIL WOOD FENCE



TWO RAIL WOOD FENCE

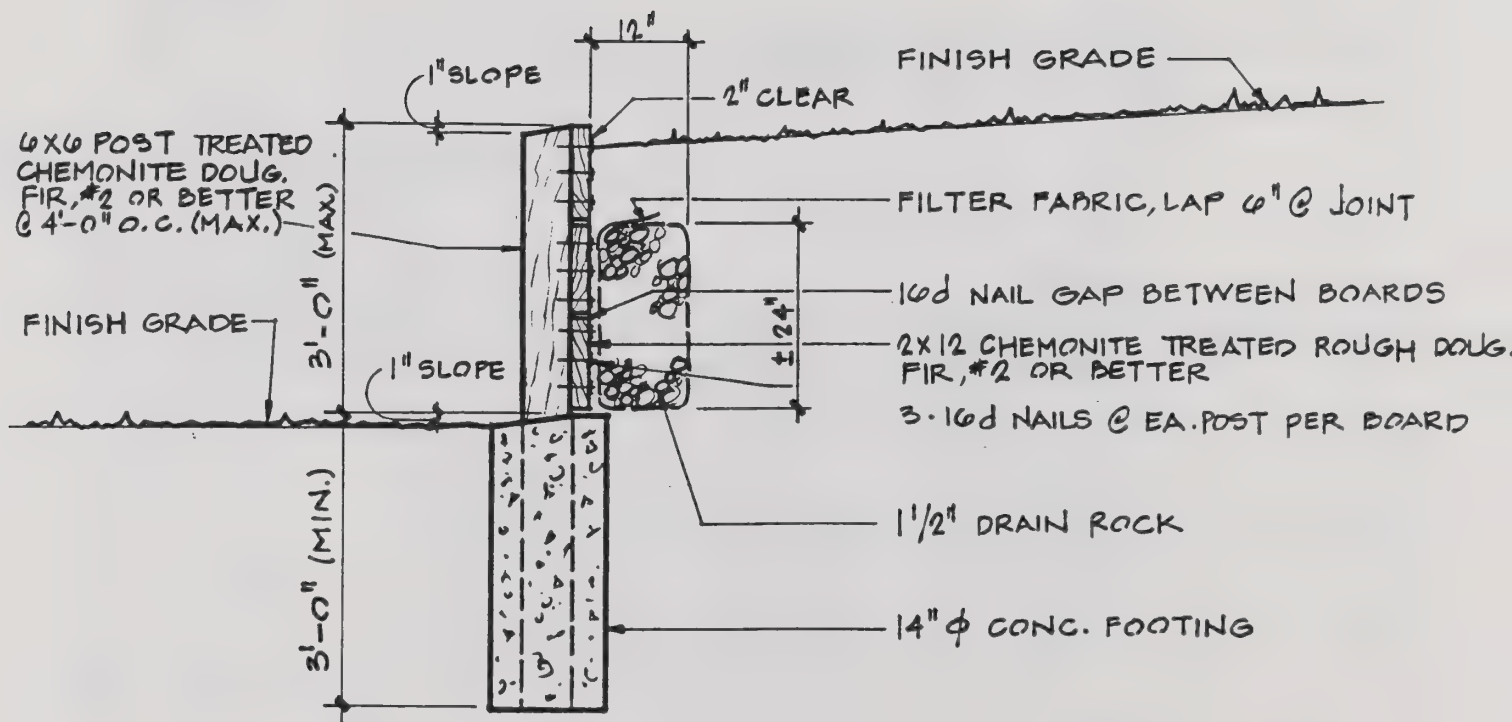


PLAN-90° CORNER DETAIL



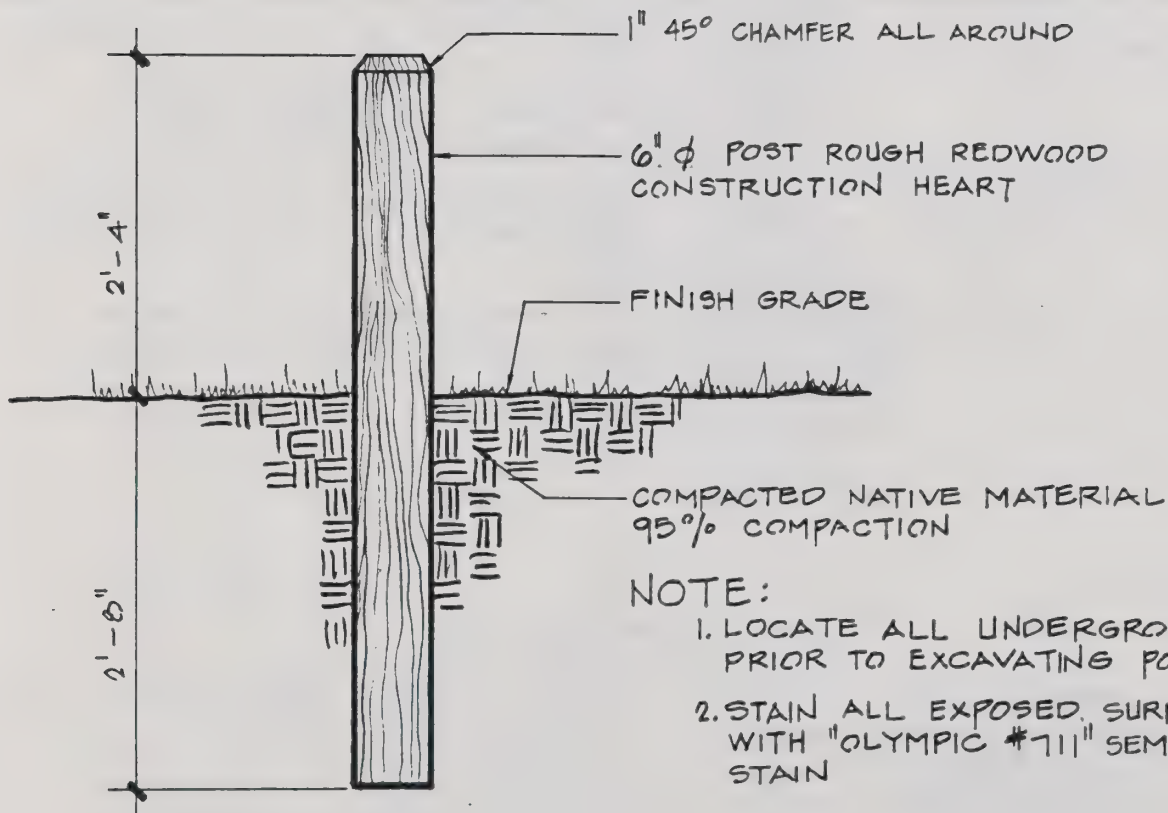
PLAN-OBTUSE or ACUTE ANGLE

ONE OR TWO RAIL WOOD FENCE



RETAINING WALL

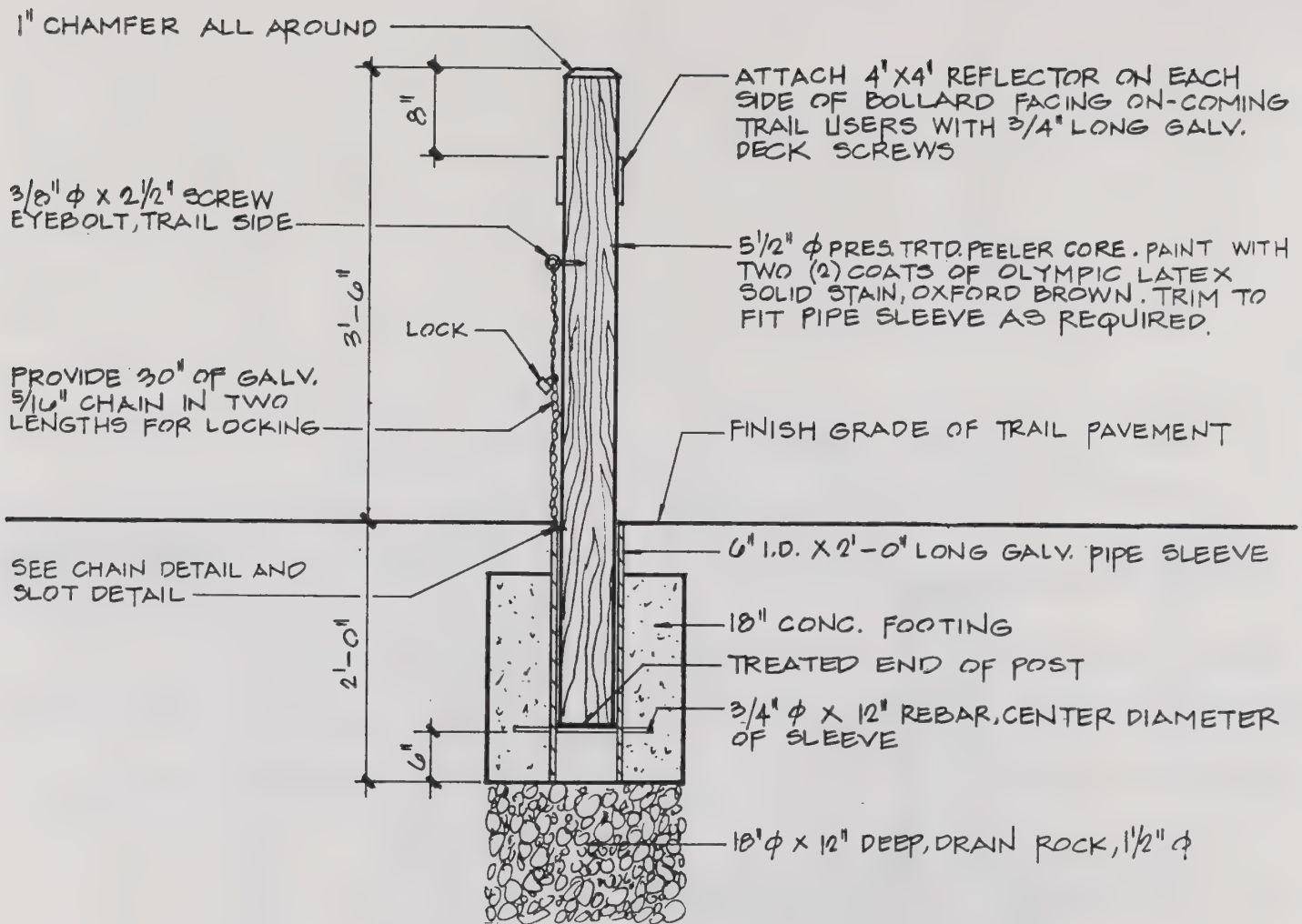
NOTE: RETAINING WALLS HIGHER THAN THREE FEET ARE REQUIRED TO BE ENGINEERED



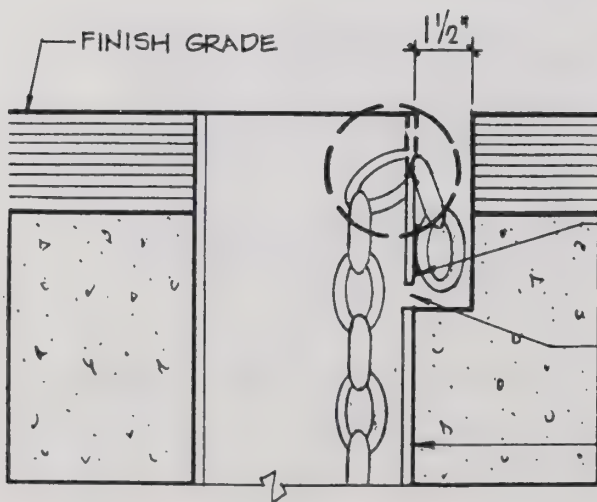
NOTE:

1. LOCATE ALL UNDERGROUND UTILITIES PRIOR TO EXCAVATING POST HOLES.
2. STAIN ALL EXPOSED SURFACES OF WOOD WITH "OLYMPIC #711" SEMI-TRANSPARENT STAIN

BOLLARD



SECTION



SECTION - CHAIN DETAIL

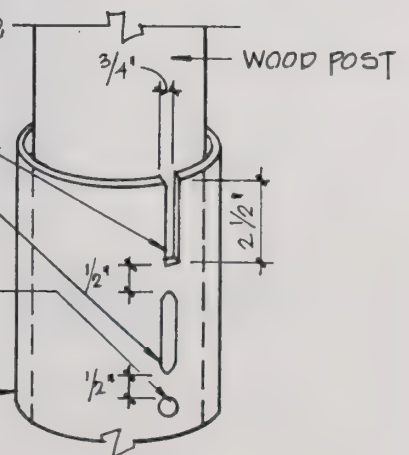
DROP CHAIN THROUGH SLOT WHEN WOOD POST IS REMOVED, SEE SLOT DETAIL

CHAIN SLOT

WELD LINK OF CHAIN TO PIPE SLEEVE

DRILL 1/2" DRAIN HOLE

PIPE SLEEVE



SLOT DETAIL

REMOVABLE WOOD BOLLARD (CHAIN)

INSTALL REFLECTOR EACH SIDE
OF BOLLARD FACING ONCOMING
TRAIL USERS

1" CHAMFER (TYP.)

NAIL 4" X 4" REFLECTOR
TO BOLLARD

5 1/2" ϕ PRES. TREATED FEELER CORE,
PAINT WITH TWO (2) COATS OF "OLYMPIC"
LATEX SOLID STAIN, OXFORD BROWN.
TRIM TO FIT PIPE SLEEVE AS REQ'D.

3/8" ϕ X 2 1/2" SCREW
EYEBOLT (TRAIL SIDE)

FINISH GRADE

FINISH GRADE OF TRAIL PAVEMENT

BOLT 7" EXTRA HEAVY
SAFETY HASP TO
SLEEVE (SEE DETAIL
BELOW)

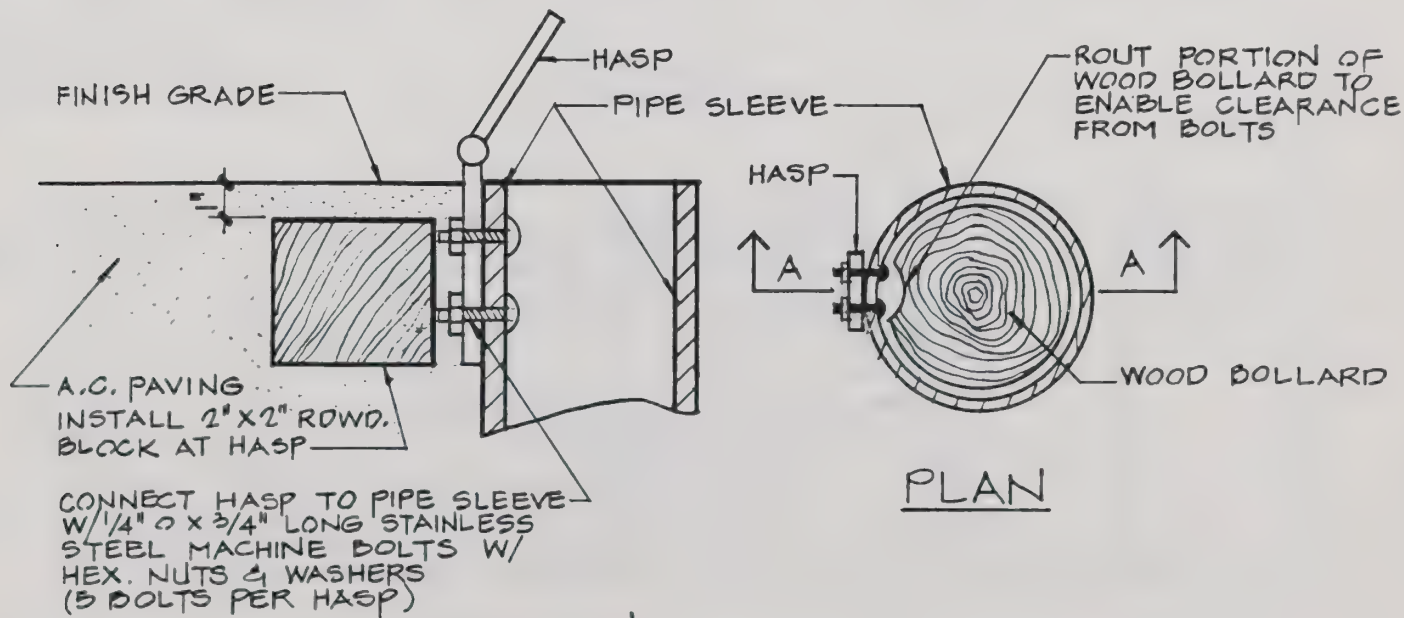
6" I.D. X 2'-0" LONG GALV. PIPE SLEEVE

TWO #4 REBARS, 4" LONG, WELD TO
SLEEVE, PAINT WELD POINTS W/"DAP"
DERUSTS OR EQUAL

18" ϕ CONC. FOOTING

18" ϕ X 12" DEEP DRAIN ROCK
(1 1/2" SIZE)

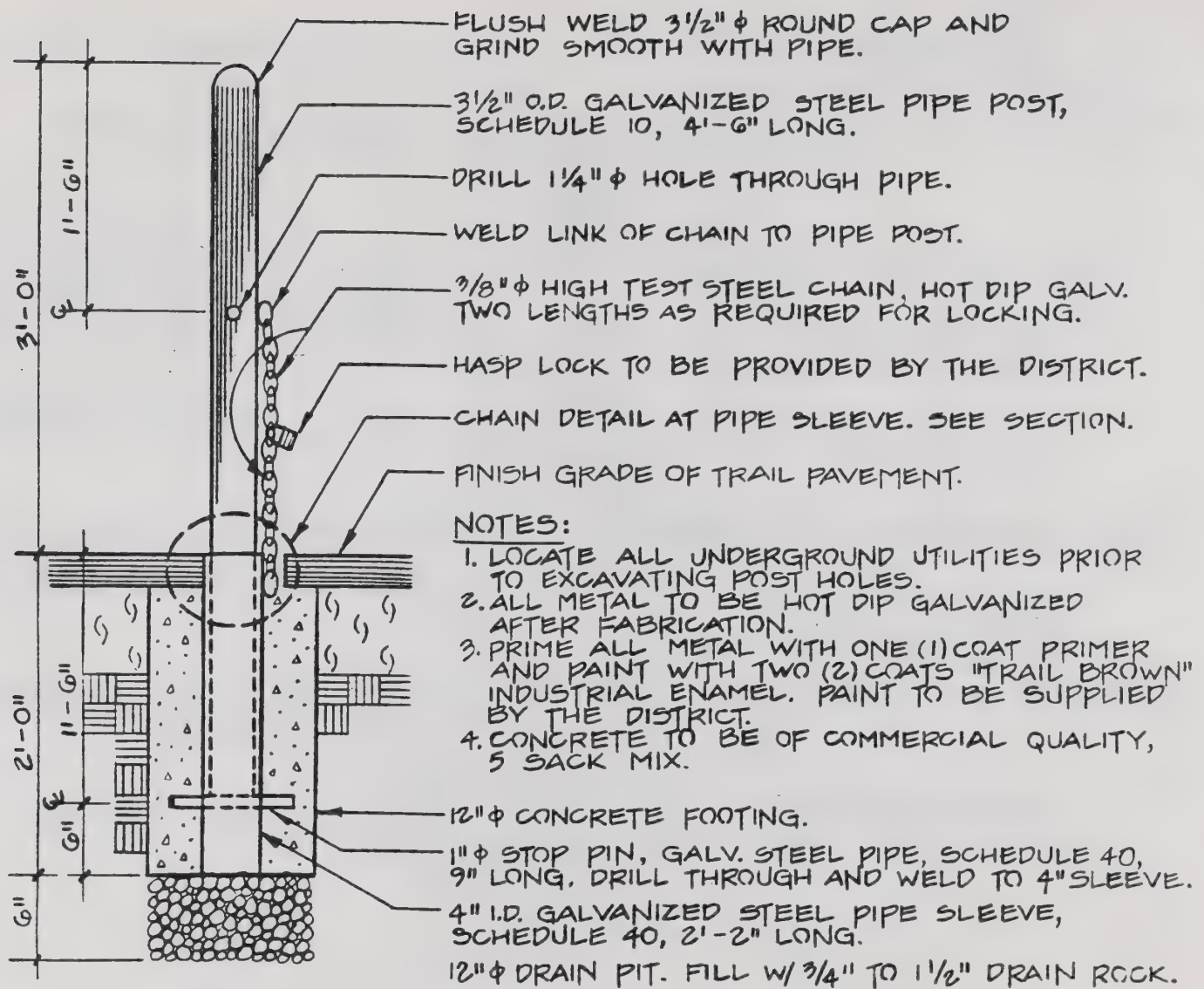
SECTION



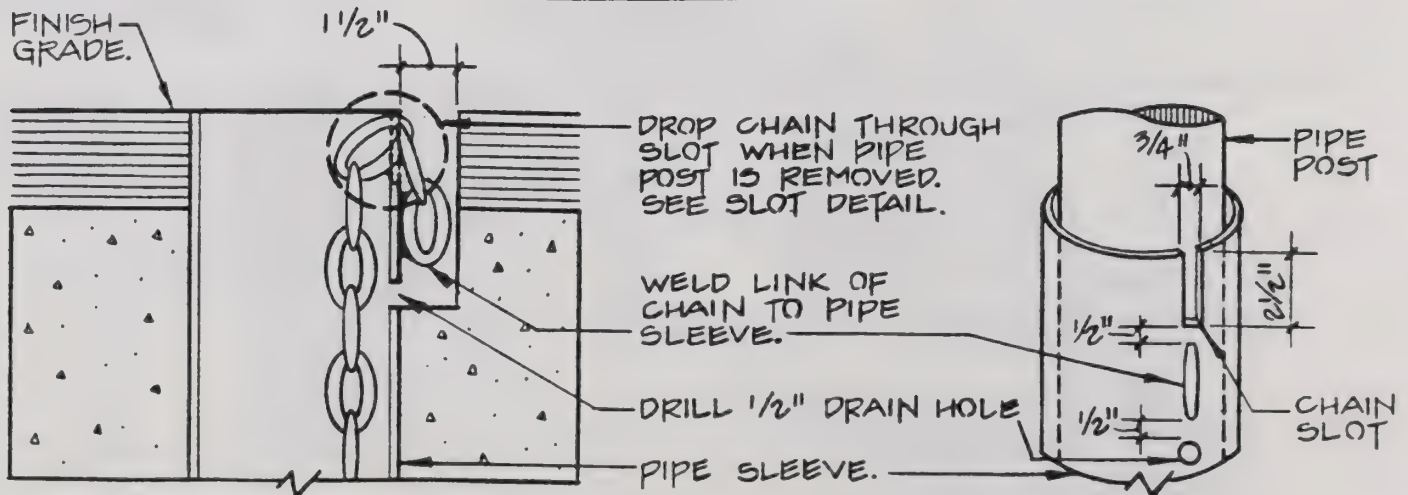
PLAN

SECTION A-A

HASP CONNECTION DETAIL
REMOVABLE BOLLARD (HASP)



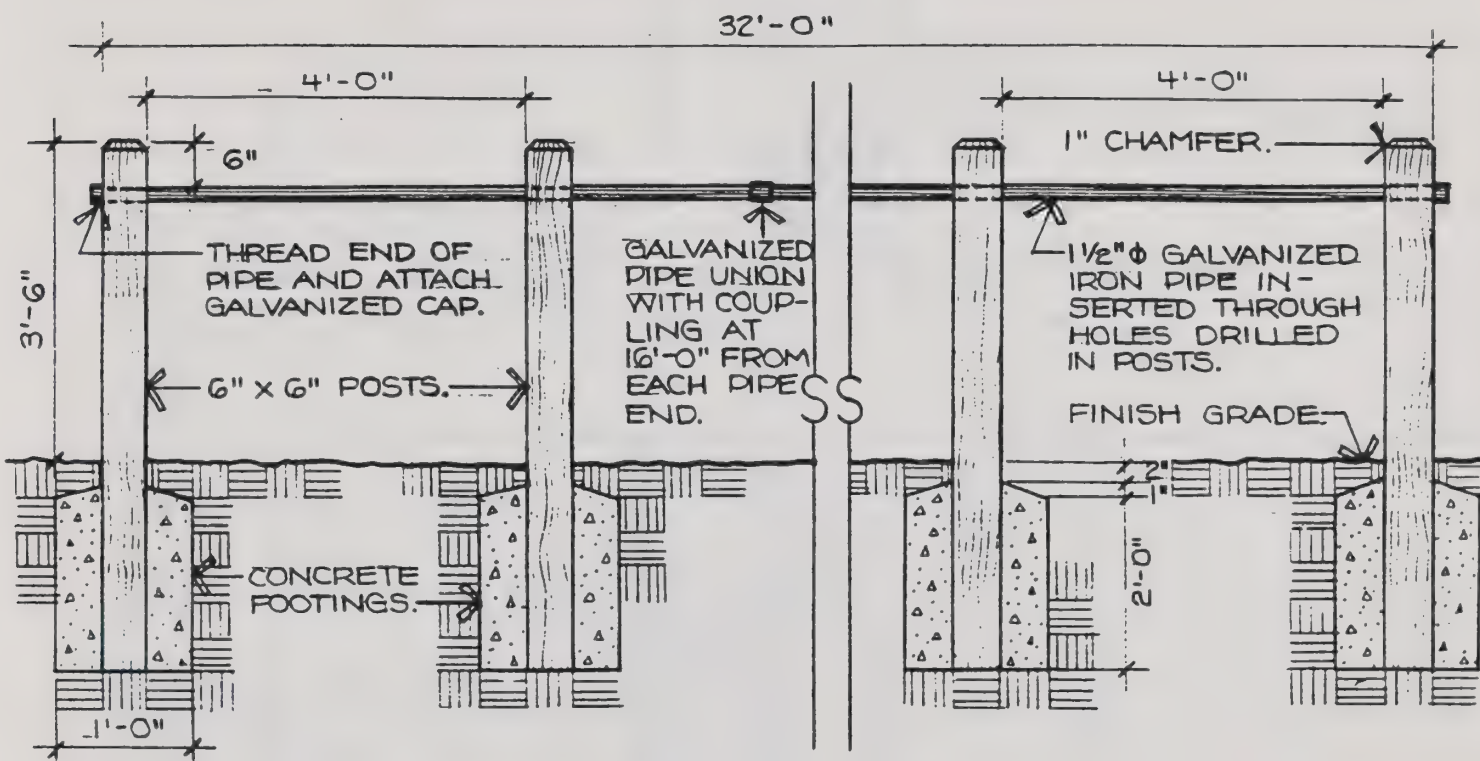
SECTION



SECTION - CHAIN DETAIL

SLOT DETAIL

REMOVABLE METAL BOLLARD



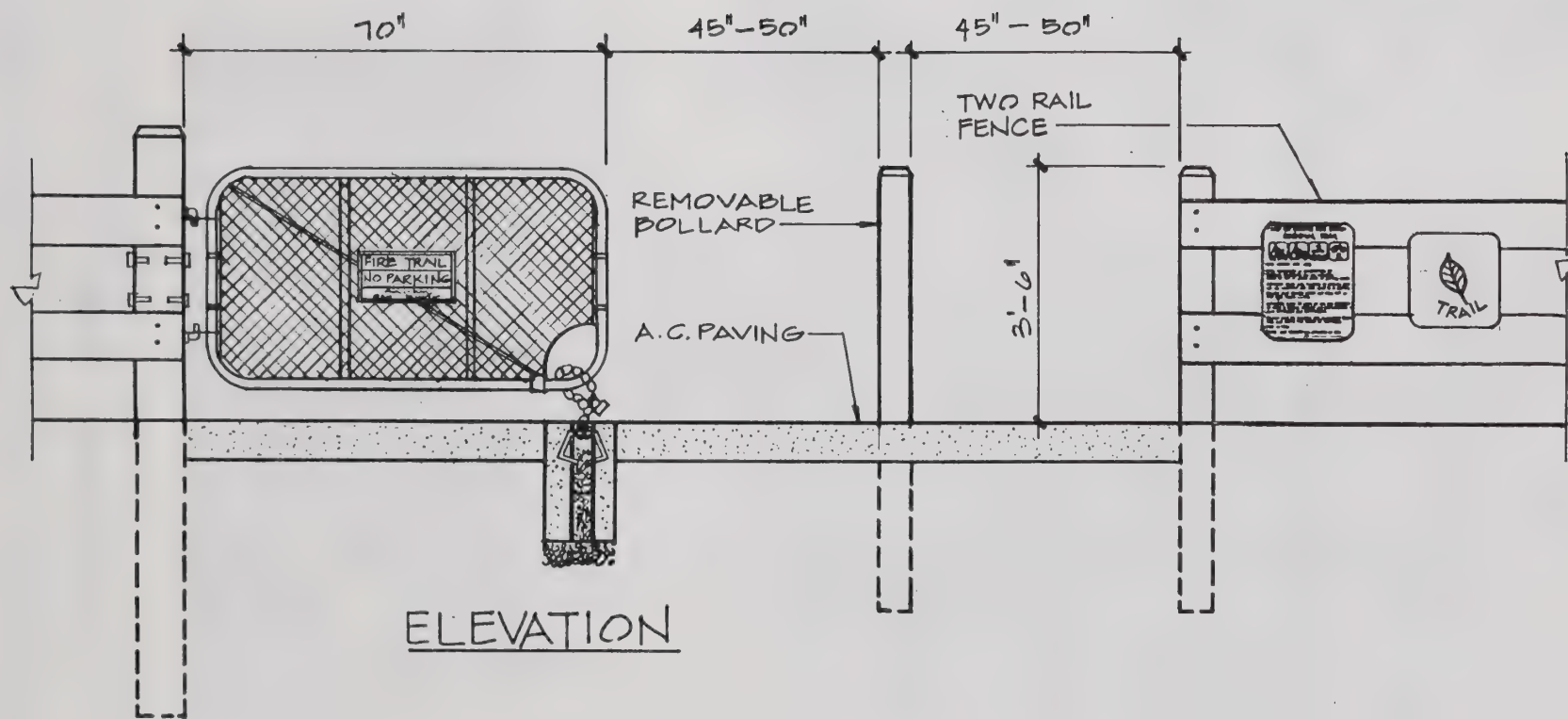
ELEVATION

SCALE: $\frac{1}{2}$ " = 1'-0"

NOTES:

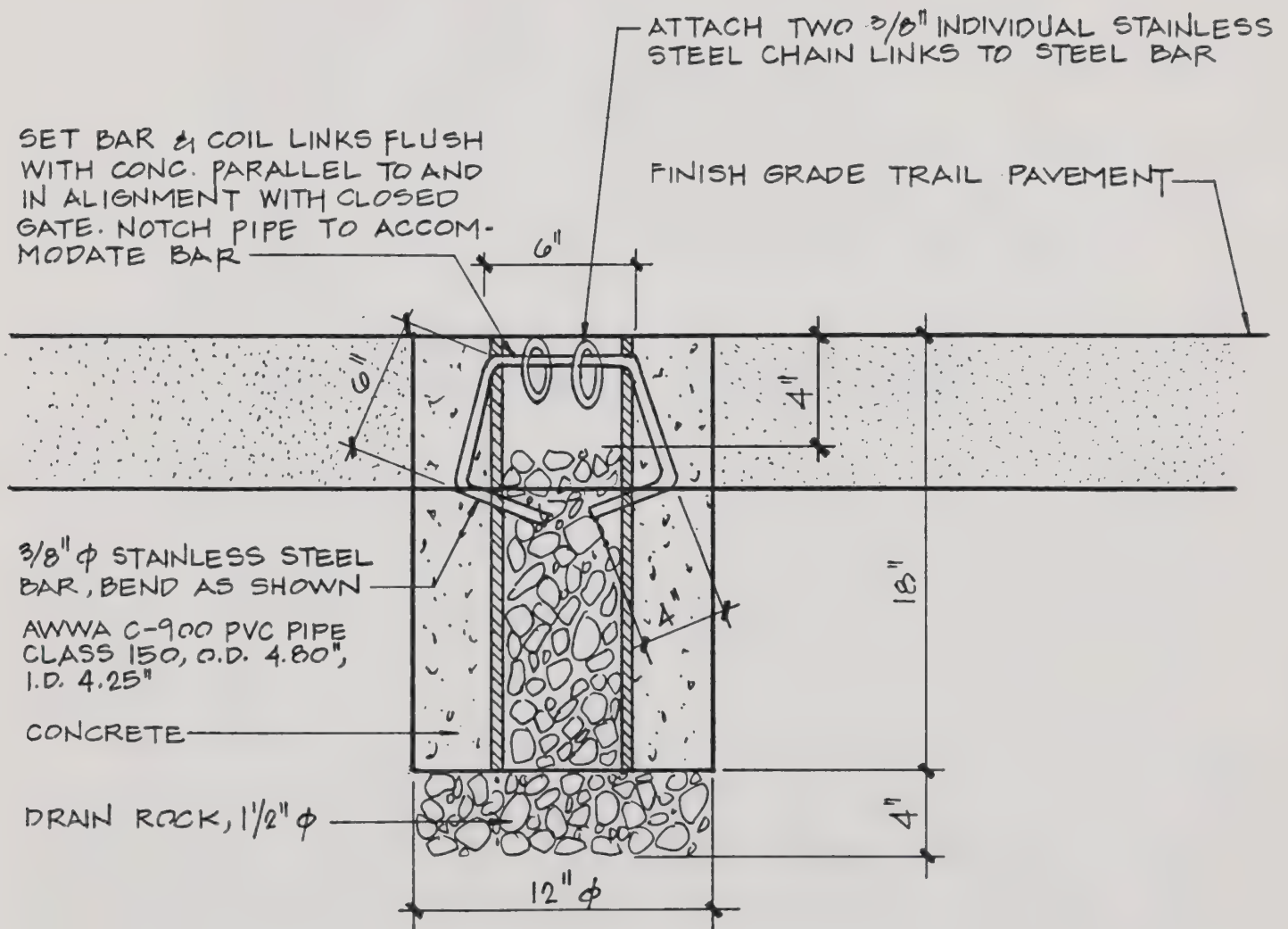
1. ALL POSTS TO BE PRESSURE TREATED ROUGH DOUGLAS FIR, #2 OR BETTER.
2. STAIN ALL EXPOSED SURFACES OF POSTS WITH OLYMPIC #711 STAIN.
3. ALL METAL TO BE HOT DIP GALVANIZED.
4. LOCATE ALL UNDERGROUND UTILITIES PRIOR TO EXCAVATING POST HOLES.
5. CONCRETE TO BE COMMERCIAL PRE MIX CONCRETE IN BAGS.

HITCHING RAIL



NOTE: THIS VIEW OF ENTRY STRUCTURE FROM THE STREET LOOKING TOWARD THE TRAIL

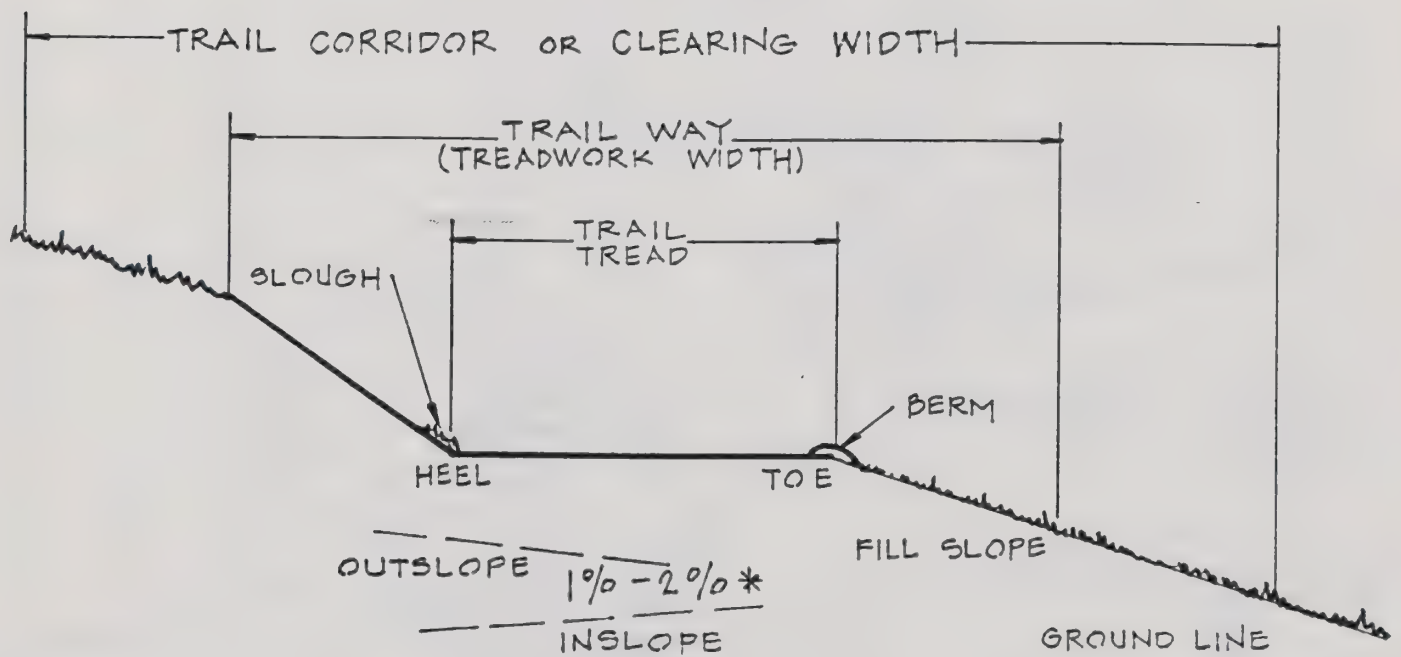
TYPICAL REGIONAL TRAIL ENTRY STRUCTURE



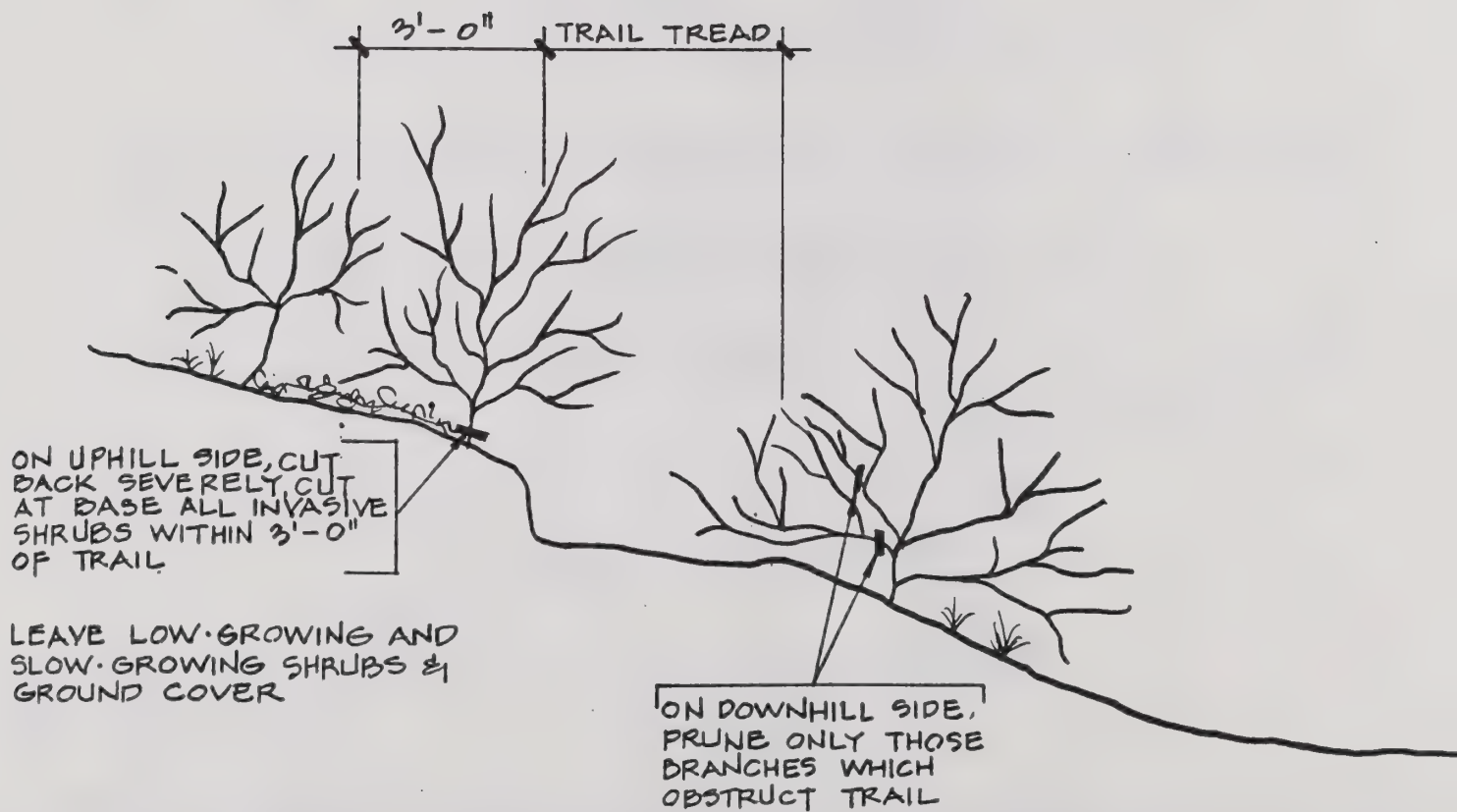
GATE ANCHOR DETAIL

MAINTENANCE DRAWINGS

TRAIL TERMS



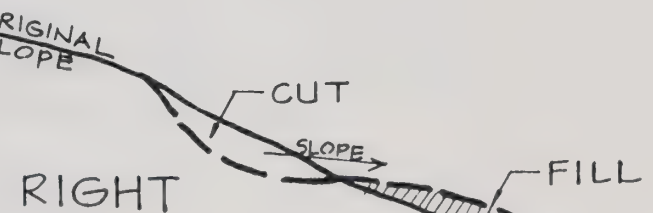
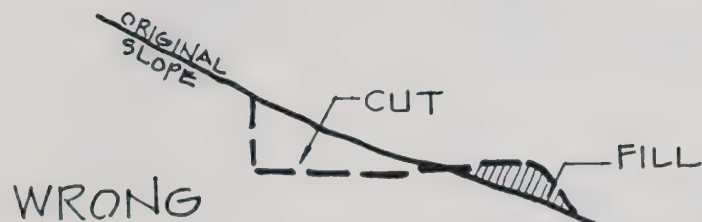
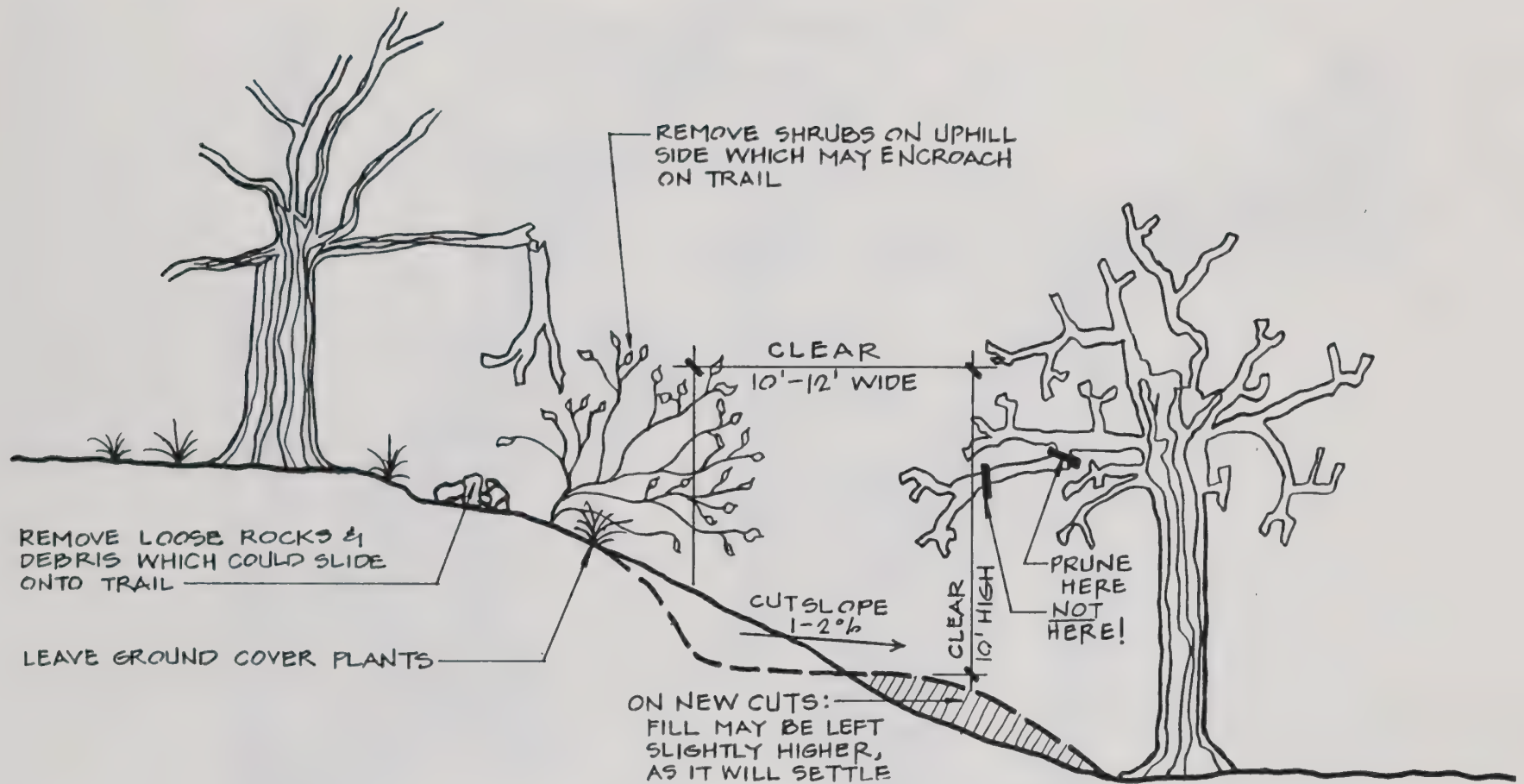
* 1% = A TRAIL GAINS 1 FOOT ELEVATION OVER A 100 FOOT LENGTH



TYPICAL VEGETATION CLEARING ON SIDE SLOPES

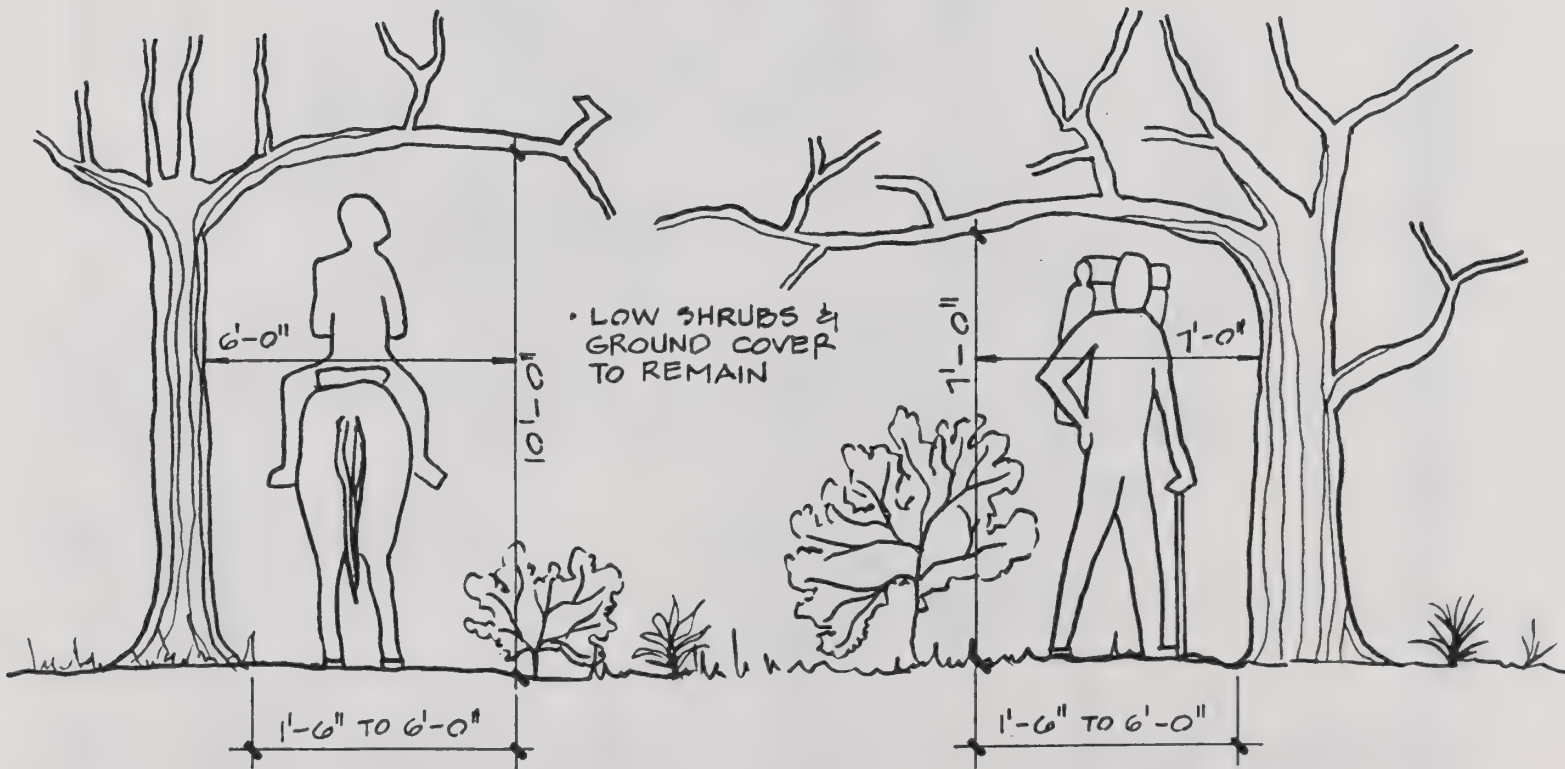
TYPICAL TREADWORK & CLEARING - UNPAVED MULTI-USE TRAILS

52

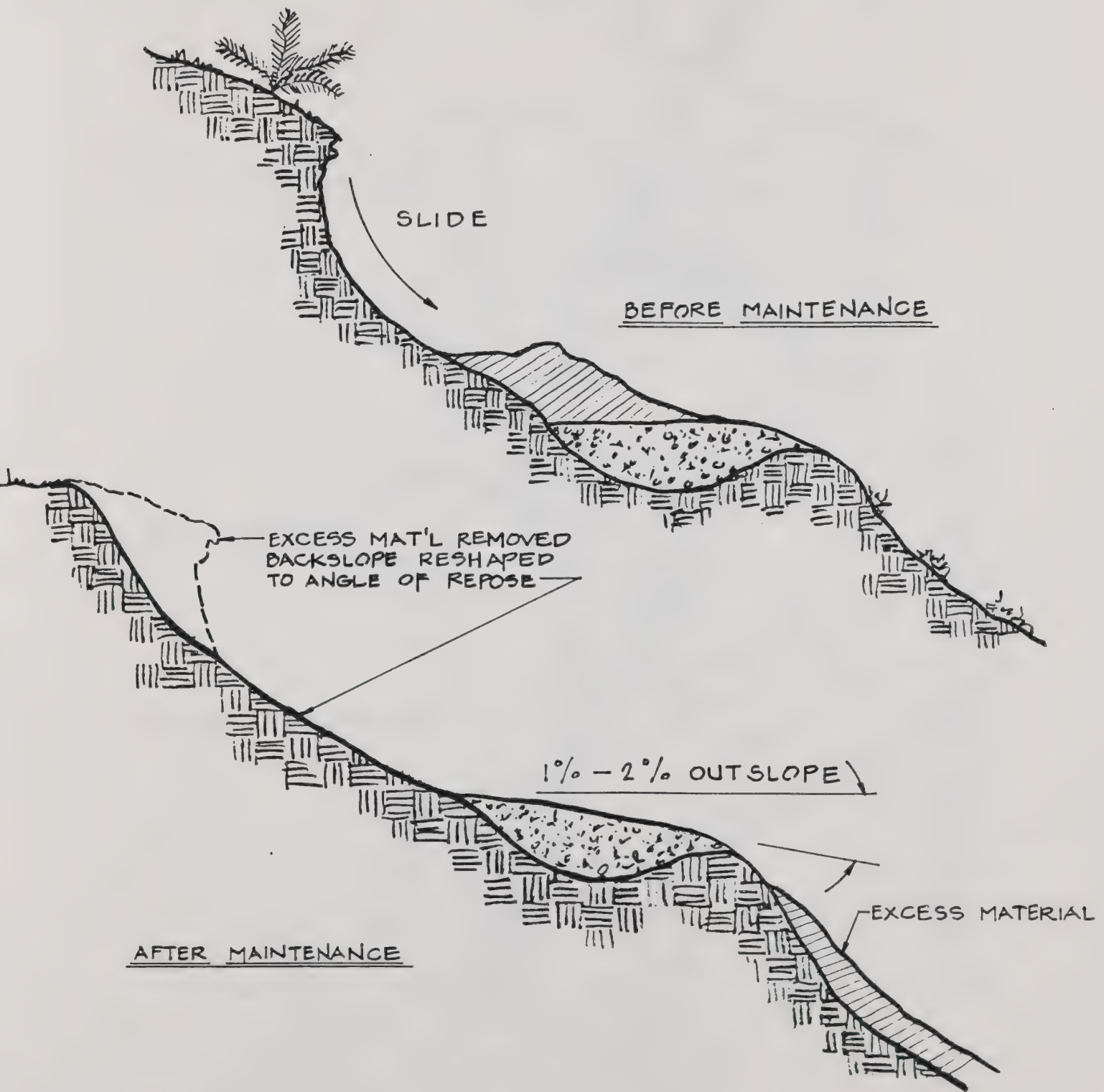


MAKE TRANSITIONS ON ALL CUTS TO MOLD THEM TO TERRAIN

- TREES & SHRUBS TO BE PRUNED FOR CLEARANCES SHOWN

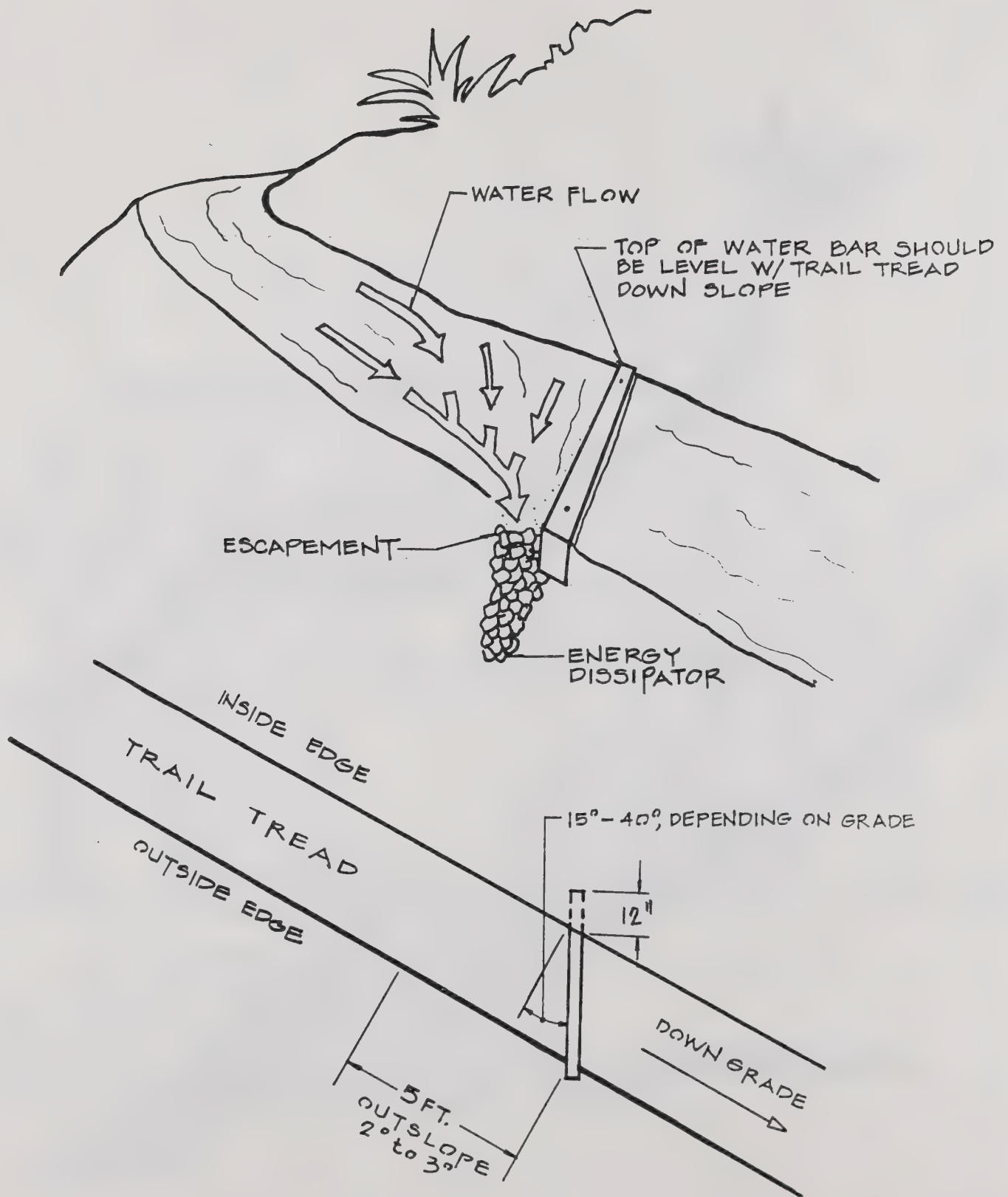


TYPICAL VEGETATION CLEARING FOR HIKERS AND HORSES ONLY TRAILS

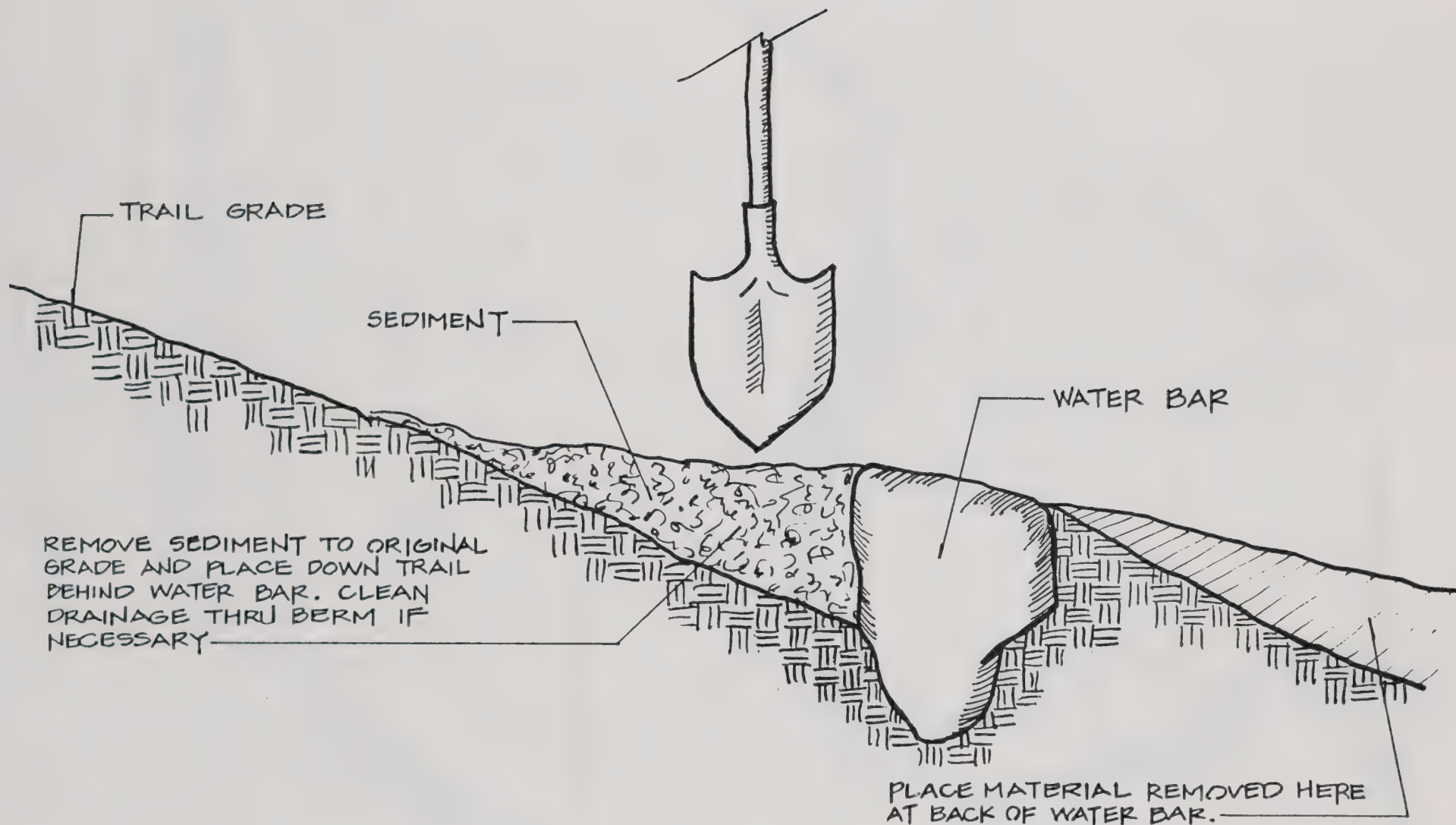


SLIDE MAINTENANCE

NOT TO SCALE

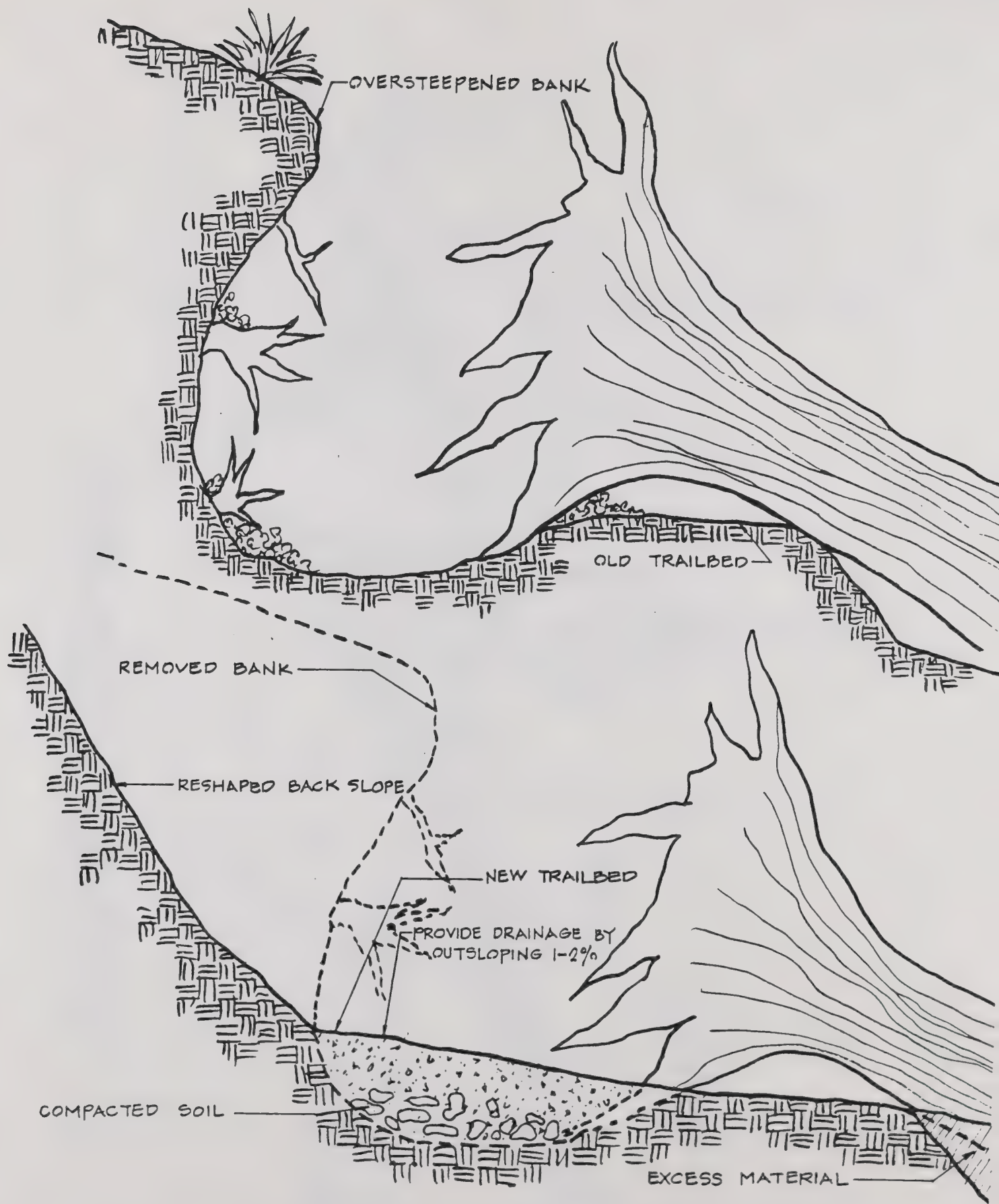


WATER BARS



CLEANING A WATER BAR

NOT TO SCALE



UPROOTED TREE
TYPICAL CROSS SECTION

TRAIL SIGNING

TRAIL SIGNING

The only access to thousands of acres of parkland is by means of trails. The use of a complete and unified signing system employing Section F Trail Signs will greatly encourage public use of the parklands. Trail signing in the Regional Parks is particularly difficult in that internal park trail systems, regional trail systems, and special-use trail systems often overlap creating trails with more than one function and more than one name. For example, when a regional trail crosses a park, it usually does so by making use of trails that already exist in that park and already have their own names. This situation, having a trail with two or more names or functions, can also occur when a special-use trail, such as a joggers' trail, makes use of existing park trails. The situation is much the same as that on some highways where, for example, Federal Route 680 and State Route 24 are in some places the same roadway.

To reduce confusion and to minimize sign installations, Park trails are signed in the following manner: First, the category of the trail needs to be identified as either a internal park trail, regional trail or a special-use trail. Internal park trails are located within the boundaries of one park. Regional trails are a linear corridor that provide links between parks, local trails, and urban communities. A special-use trail could be a self-guided nature trail or possibly a jogging trail. Second, any restrictions of the trail usage must be posted. Trails are identified by F15, F16 or F17 Trail Marker posts. These posts, with trail names and directional arrows, are installed at the trail heads and at decision points along the trail routes. The directional arrows or trail names can be routed into the post or a disk system can be used. Trail post may also be used as mileage or destination markers.

Where regional trails cross parks and make use of the existing internal trails, disk marker plates are attached to the existing posts under the trail name. By making use of these existing posts, regional trail routes can be marked without installing additional trail posts at each decision point.

In addition to the trail signs that guide visitors when they are on the trails, it is often useful to provide additional information at trail heads and other major access points. Section B Information Panels with maps, rules, interpretive messages, or other appropriate information can serve the function of providing users with an overall understanding of a trail or trail system. At the beginning of special-use trails, it is essential to identify the trail and provide information explaining its length and the symbol used in identifying its route.



SIGN: F1 INTERNAL TRAILHEAD MARKER

SIZE: 15" x 15", Polyplate

POLICY: Use the F1 Internal Trailhead Marker to identify entrances to internal trails at staging areas and major road crossings where the F15 Trail Marker does not provide trail identification from an adequate distance.

LOCATION: Install as needed.

SOURCE: Sign Shop

STOCK NO:



SIGN: F2 REGIONAL TRAILHEAD MARKER

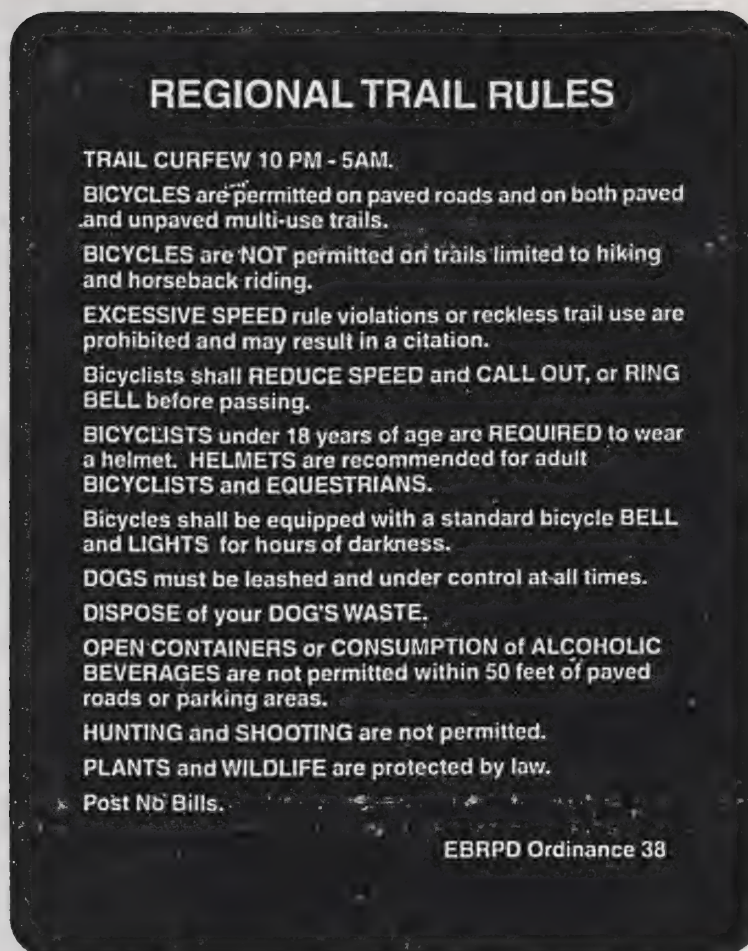
SIZE: 15" x 15", Polyplate

POLICY: Use the F2 Regional Trailhead Marker to identify entrances to regional trails at staging areas and major road crossings where the F15 sign does not provide trail identification from an adequate distance.

LOCATION: Install as needed

SOURCE: Sign Shop

STOCK NO:



SIGN: F3 REGIONAL TRAIL RULES

SIZE: 15" x 19", Polyplate

POLICY: Use the F3 sign to inform the public of Ordinance 38 trail rules on regional trails.

LOCATION: Install on roads or pathways, or fence mount at trailheads or other appropriate locations.

SOURCE: Sign Shop

STOCK NO:



SIGN: F4 INTERNAL TRAIL RULES

SIZE: 15" x 19", Polyplate

POLICY: Use the F4 sign to inform the public of Ordinance 38 trail rules on internal trails.

LOCATION: Install on roads or pathways, or fence mount at trailheads or other appropriate locations.

SOURCE: Sign Shop

STOCK NO:



SIGN: F5 YIELD TO

SIZE: 15" x 15", Polyplate

POLICY: The F5 yield to sign should only be used on multipurpose trails. The purpose of the sign is to establish a priority of what trail user group yields to other groups.

LOCATION: Install on multipurpose trails only. Install in the standard position for use beside either roads or pathways or fence mount at trailheads or other appropriate locations.

SOURCE: Sign Shop

STOCK NO:



SIGN: F6 BICYCLE TRAIL

SIZE: 15" x 15", Polyplate

POLICY: Use the F6 Bicycle Trail sign to identify, or with the C32 Arrow to indicate the direction to a bicycle trail.

LOCATION: Install in the standard position for use beside either roads or pathways or fence mount at trailheads or other appropriate locations.

SOURCE: Sign Shop

STOCK NO:



SIGN: F7 REDUCE SPEED AND CALL OUT

SIZE: 15" x 19", Polyplate

POLICY: The F7 Reduce Speed and Call Out before passing sign should only be used on multipurpose trails. The purpose of the sign is to have bicycle users warn other trail users when they are about to pass.

LOCATION: Install on multipurpose trails only. Install in the standard position for use beside either roads or pathways or fence mount at trailheads or other appropriate locations.

SOURCE: Sign Shop

STOCK NO:



SIGN: F8 DOWN GRADE REDUCE SPEED

SIZE: 15" x 15", Polyplate

POLICY: The F8 Down Grade Reduce Speed sign warns bicyclist of steep grades.

LOCATION: Install prior to the down grade to warn bicyclist to reduce their speed.
Install as needed.

SOURCE: Sign Shop

STOCK NO:



SIGN: F9 TRAIL DIRECTIONAL ARROW

SIZE: 15" x 15", Polyplate

POLICY: The F9 Trail Directional Arrow sign warns bicyclist of trail direction changes that may not be apparent to the bicyclists.

NOTE: Straight, left and right arrows are available.

LOCATION: Install the F9 arrow prior to the trail change: Install as needed.

SOURCE: Sign Shop

STOCK NO:



SIGN: F10 NO BICYCLES

SIZE: 15" x 15", Polyplate

POLICY: Use the F10 sign to inform park users of areas where bicycles are prohibited.

LOCATION: Install in the standard position for use on pathways.

SOURCE: Central Stores

STOCK NO: 2504170



SIGN: F11 HORSE TRAIL

SIZE: 15" x 15", Polyplate

POLICY: Use the F11 Horse Trail sign to identify, or with the C32 Arrow to indicate the direction to, a horse trail. Use a C33 Subordinate Plate to indicate the trail name, if necessary.

LOCATION: Install in the standard position for use beside either roads or pathways or fence mount at trailheads or other appropriate locations.

SOURCE: Central Stores

STOCK NO: 2502055



SIGN: F12 NO HORSES

SIZE: 15" x 15", Polyplate

POLICY: Use the F12 sign to inform park users of areas where horses are prohibited.

LOCATION: Install in the standard position for use on pathways.

SOURCE: Central Stores

STOCK NO: 2504175



SIGN: F14 TRAIL MILEAGE MARKERS

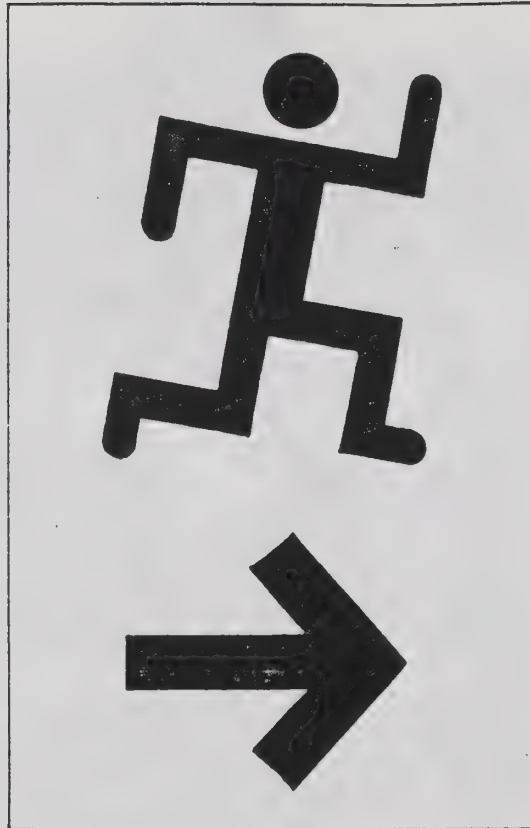
SIZE: 6350 Stamark, 4" numbers and Arrow

POLICY: Use the F14 Trail Mileage pavement marker tape to show trail mileage. The mileage markers will provide trail users the distance traveled while on the trail.

LOCATION: Install in both directions of paved trails at half mile or quarter mile segments.

SOURCE: Sign Shop

STOCK NO:



SIGN: F14 JOGGER'S TRAIL

SIZE: 14" x 22", Posterboard

POLICY: Use the F14 Jogger's Trail sign as a temporary sign to mark the location and route of foot races.

LOCATION: Install as needed.

NOTE: Order straight, right or left arrow(s) and the quantity of each needed.

SOURCE: Sign Shop

STOCK NO:



SIGN: F15 TRAIL MARKER

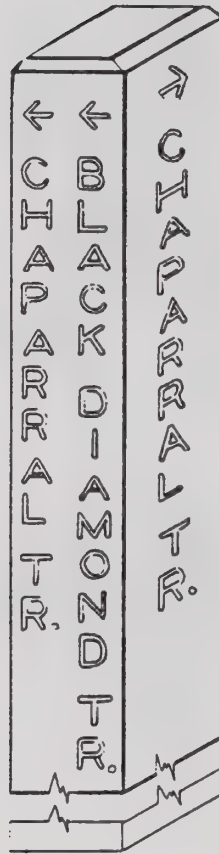
SIZE: 4" x 4" x 72", redwood or recycled plastic

POLICY: Use the F15 Trail Marker sign to identify trailheads, trail intersections, and other decision points. Use in conjunction with trail disks to identify specialuse trails and regional trails. The F15 Trail Marker sign may also be used as a mileage marker.

LOCATION: Install at trailheads and trail intersections with the top of the post 40" maximum above grade.

SOURCE: Sign Shop

STOCK NO:



SIGN: F16 TRAIL MARKER

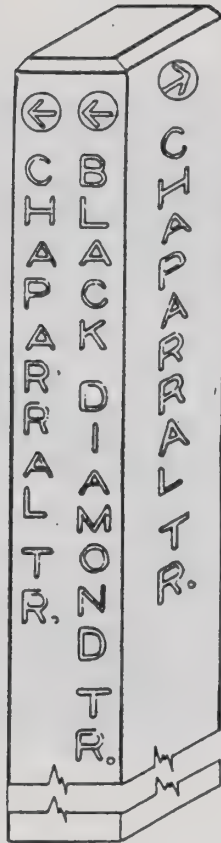
SIZE: 6" x 6" x 72", Redwood

POLICY: Use the F16 Trail Marker sign to identify trailheads, trail intersection, and other decision points. Use in conjunction with trail disks to identify specialuse trails and regional trails. The F16 Trail Marker milled lumber size of 5 1/2" x 5 1/2" restricts the use of more than one 3" inch disk per side. Use the F17 Trail Marker for locations needing two disks per side.

LOCATION: Install at trailheads and trail intersections with the top of the post 40" maximum above grade.

SOURCE: Sign Shop

STOCK NO:



SIGN: F17 TRAIL MARKER

SIZE: 8" x 8" x 72", Redwood

POLICY: Use the F17 Trail Marker sign to identify trailheads, trail intersections, and other decision points. Use in conjunction with trail disks to identify specialuse trails and regional trails. The F17 Trail Marker should be used when two 3" disks are needed on one side of a post.

LOCATION: Install at trailheads and trail intersections with the top of post 40" maximum above grade.

SOURCE: Sign Shop

STOCK NO:



SIGN: F18 PLEASE STAY ON TRAIL

SIZE: 18" X 9", Polyplate

POLICY: Use the F18 sign on regional trails where trespassing by trail users onto adjacent private property is a problem.

LOCATION: Install as a fence or postmounted sign as needed. No more than one sign should be readable from any given point.

SOURCE: Central Stores

STOCK NO: 2503032



SIGN: F19 BICYCLE STOP

SIZE: 18" x 18", Aluminum, Reflective

POLICY: Use the F19 sign at the intersection of a bicycle trail and a roadway where the bicycle trail and a roadway where the bicycles are required to stop. Do not use this sign as a motor vehicle stop sign.

LOCATION: Install in the standard position on the right side of the bicycle trail in such a manner that a clear view is afforded in both directions on the roadway carrying motor vehicle traffic. A stop line on the pavement may be added for additional emphasis. Use roadway installation standards.

NOTE: Sign is State of California R1, Federal R11.

SOURCE: Central Stores

STOCK NO: 2503120



SIGN: F20 BICYCLE YIELD

SIZE: 18" x 18" x 18", Polyplate, Reflective

POLICY: Use the F20 sign at the intersection of a bicycle trail and a roadway where it is desirable to assign right of way to motor vehicle traffic but where the F19 Stop Sign is unduly restrictive. Do not install this sign where it would conflict with a Stop or Yield sign on the roadway or where sight distance is so limited a near stop is necessary before entering the intersection. Do not use this sign to control motor vehicle traffic.

LOCATION: Install in the standard position on the right side of the bicycle trail in such a manner that a clear view is afforded in both directions on the roadway carrying motor vehicle traffic. A stop line on the pavement may be added for additional emphasis. Use roadway installation standards.

SOURCE: Sign Shop

STOCK NO:



SIGN: F21 CAUTION STORM DAMAGED TRAIL

SIZE: 24" x 16", Yellow Corrugated Plastic

POLICY: The F21 Caution Storm Damaged Trail Sign warns trail users of hazards.

LOCATION: Install as needed.

SOURCE: Sign Shop

STOCK NO:



SIGN: F22 ROUGH TRAIL

SIGN: 15" x 15", Polyplate

POLICY: The F22 Rough Trail Sign warns trail users of uneven or rough trail areas.

LOCATION: Install as needed.

SOURCE: Sign Shop

STOCK NO:



SIGN: F23 TRAIL CLOSED

SIZE: 24" x 16", Polyplate

POLICY: The F23 Trail Closed Sign informs the public that a trail section or the entire trail is closed for construction or improvement for a long period of time. When relatively small areas are temporarily closed for construction work use the E16 Construction Area Sign.

LOCATION: Install as needed.

SOURCE: Sign Shop

STOCK NO:



SIGN: F24 TRAIL DISK

SIZE: 3", Aluminum

POLICY: Trail Disks identify regional trails, direction of the trail, various trail uses and trail restrictions as needed.

LOCATION: Install on F15, F16, or F17 Trail Post in 3" routed impressions. Attach the disks with epoxy glue and if needed, 5d common galvanized (ring shank) nails.

SOURCE: Sign Shop

STOCK NO:



SIGN: F25 HIKER'S TRAIL

SIZE: 15" x 15", Polyplate

POLICY: Use the F25 Hiker's Trail sign to identify, or with the C32 Arrow to indicate the direction to a hiker's trail. Use a C33 Subordinate Plate to indicate the trail name, if necessary.

LOCATION: Install in the standard position for use beside either roads or pathways or fence mount at trailheads or other appropriate locations.

SOURCE: Sign Shop

STOCK NO:



SIGN: F26 BICYCLE SPEED LIMIT

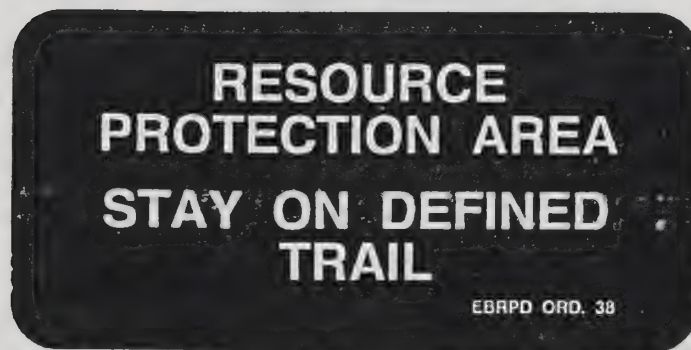
SIZE: 15" x 19", Polyplate

POLICY: Use the F26 sign to give notice of a 15 mph bicycle speed limit.

LOCATION: Install in the standard position for use on trails at the beginning of the speed zone. When the speed zone is longer than one mile, intermediate signs may be posted. Locate the sign no closer than 50 feet from any other sign with 200 feet being preferred..

SOURCE: Sign Shop

STOCK NO:



SIGN: F27 RESOURCE PROTECTION AREA

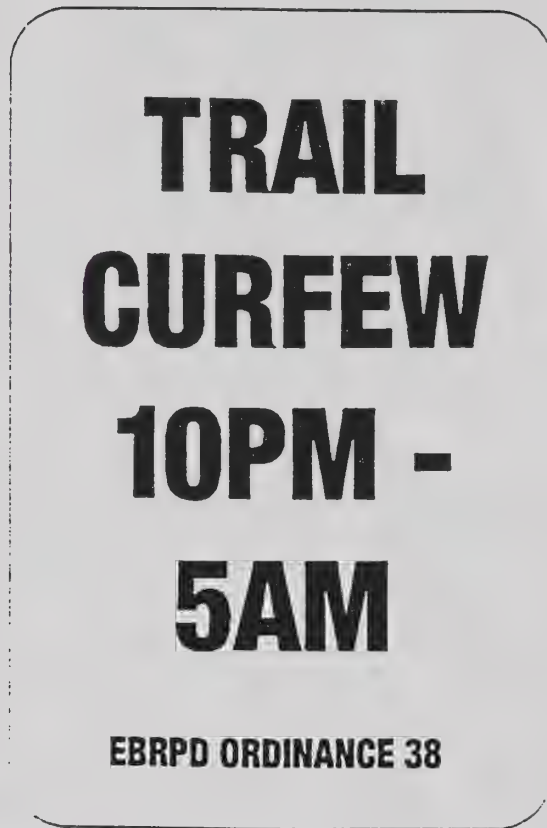
SIZE: 15" x 15" or 18" x 9" Polyplate

POLICY: Use the F27 sign on trails where park users leaving established trails is a problem.

LOCATION: Install as a fence or post mounted sign as needed. No more than one sign should be readable from any given point.

SOURCE: Sign Shop

STOCK NO:



SIGN F28 TRAIL CURFEW

SIZE: 4" x 6" Polyplate

POLICY: Use the F28 sign to inform trail users of the 10 p.m. to 5 a.m. trail curfew

LOCATION: Install at trailheads on entry structures.

SOURCE: Sign Shop

STOCK NO:



The Park District needs your help in controlling pet waste so that all park visitors can enjoy a clean, odor free park experience.

Please dispose of your dog's wastes by placing them in a garbage can.

Dogs must be leashed and under control at any posted area, paved trails, parking lot, picnic site, lawn or developed area. No dogs or other animals are permitted at any beach, wetland or marsh. Dogs may be off leash in open space and undeveloped areas of parklands, provided they are under control at all times.



EBRPD Ordinance 38

SIGN F29 DOG ETIQUETTE

SIZE: 15" x 15" Polyplate

POLICY: Use the F29 Dog Etiquette sign to inform park users about dog waste etiquette.

LOCATION: Install in standard position for use on pathways.

SOURCE: Central Stores

STOCK NO: 2504230



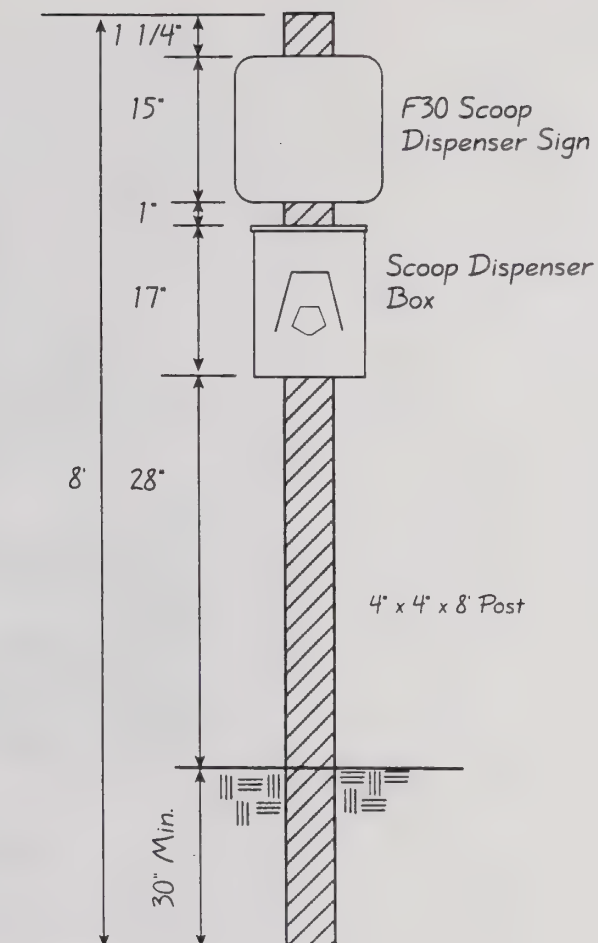
The Park District needs your help in controlling pet waste so that all park visitors can enjoy a clean, odor free park experience.

The District provides scoop dispensers for waste clean-up. Please dispose of your dog's wastes by placing them in a garbage can.

Dogs must be leashed and under control at any posted area, paved trails, parking lot, picnic site, lawn or developed area. No dogs or other animals are permitted at any beach, wetland or marsh. Dogs may be off leash in open space and undeveloped areas of parklands, provided they are under control at all times.



EBRPD Ordinance 38



SIGN: F30 SCOOP DISPENSER DOG ETIQUETTE

SIZE: 15" x 15" Polyplate

POLICY: Use the F30 Scoop Dispenser Dog Etiquette sign to inform park users about dog waste etiquette. This sign should be mounted above the scoop dispenser box. The Scoop Dispenser box is available from Central Stores (stock number 3408051).

LOCATION: Install in standard position for use on pathways.

SOURCE: Central Stores

STOCK NO: 2504229



SIGN: F31 COMBINATION REGIONAL TRAIL RULE SIGN

SIZE: 15" x 19" Polyplate

POLICY: Use the F31 Combination Regional Trail Rule Sign to inform the public of Ordinance 38 trail rules on trails.

LOCATION: Install on roads or pathways, or fence mount at trailheads or other appropriate locations.

SOURCE: Sign Shop

STOCK NO:

TRAIL TEMPORARILY
CLOSED
TO BICYCLE & EQUESTRIAN
USE UNTIL FURTHER NOTICE DUE
TO WET WEATHER CONDITIONS
EBRPD ORDINANCE 38

SIGN: F32 TRAIL TEMPORARILY CLOSED DUE TO WET WEATHER

SIZE: 24" x 16", Yellow Corrugated Plastic

POLICY: The F32 Trail Temporarily Closed Due To Wet Weather Sign warns trail users of hazards.

LOCATION: Install as needed.

SOURCE: Sign Shop

STOCK NO:



SIGN: F33 TRAIL REPAIR UNDERWAY

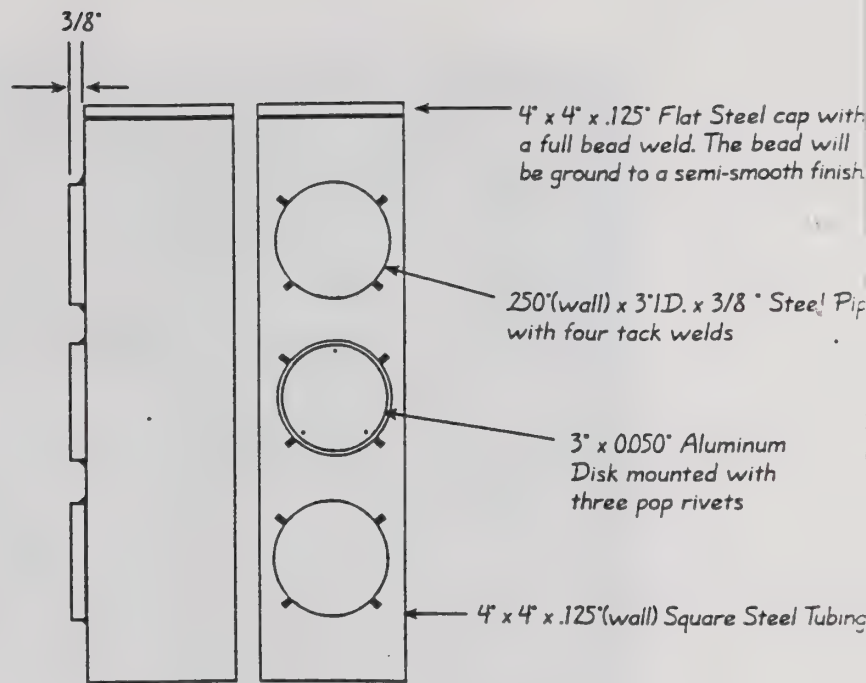
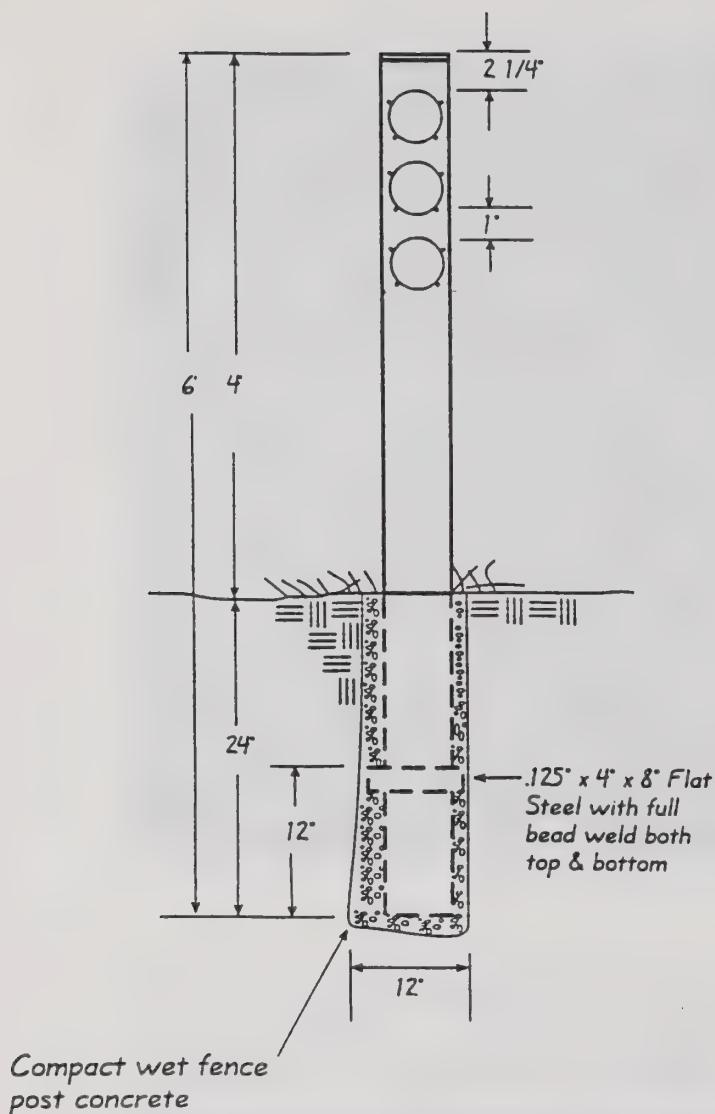
SIZE: 24" x 16", Polyplate

POLICY: The F33 Trail Repair Underway Sign informs the park user about trail repair projects funded by the Trail Assessment District.

LOCATION: Install as needed.

SOURCE: Sign Shop

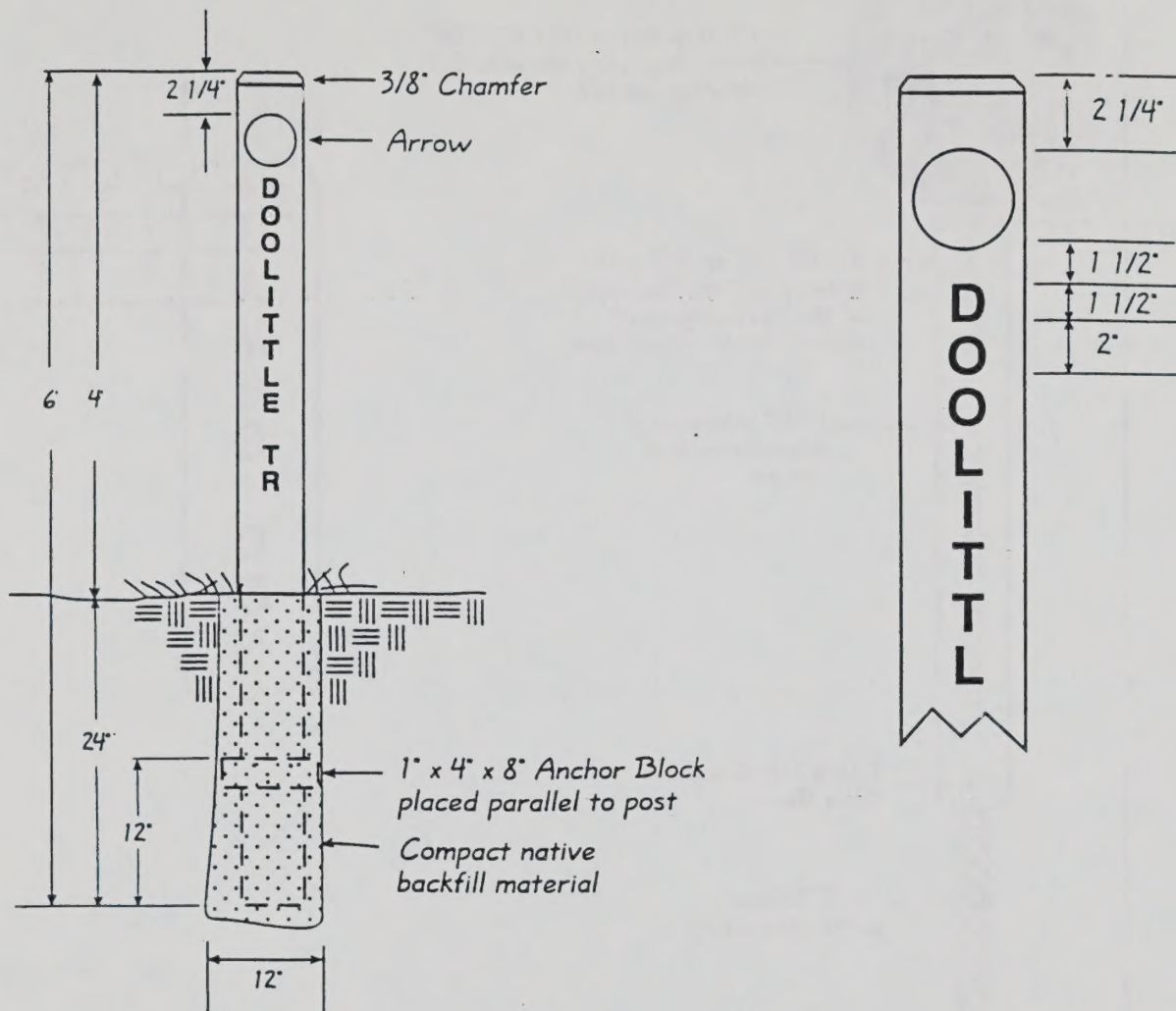
STOCK NO:



1. The post shown is typical and the actual post may vary depending on location.
2. The 3" ID Steel pipe rings will be attached per the requirements in the field.
3. Finish:

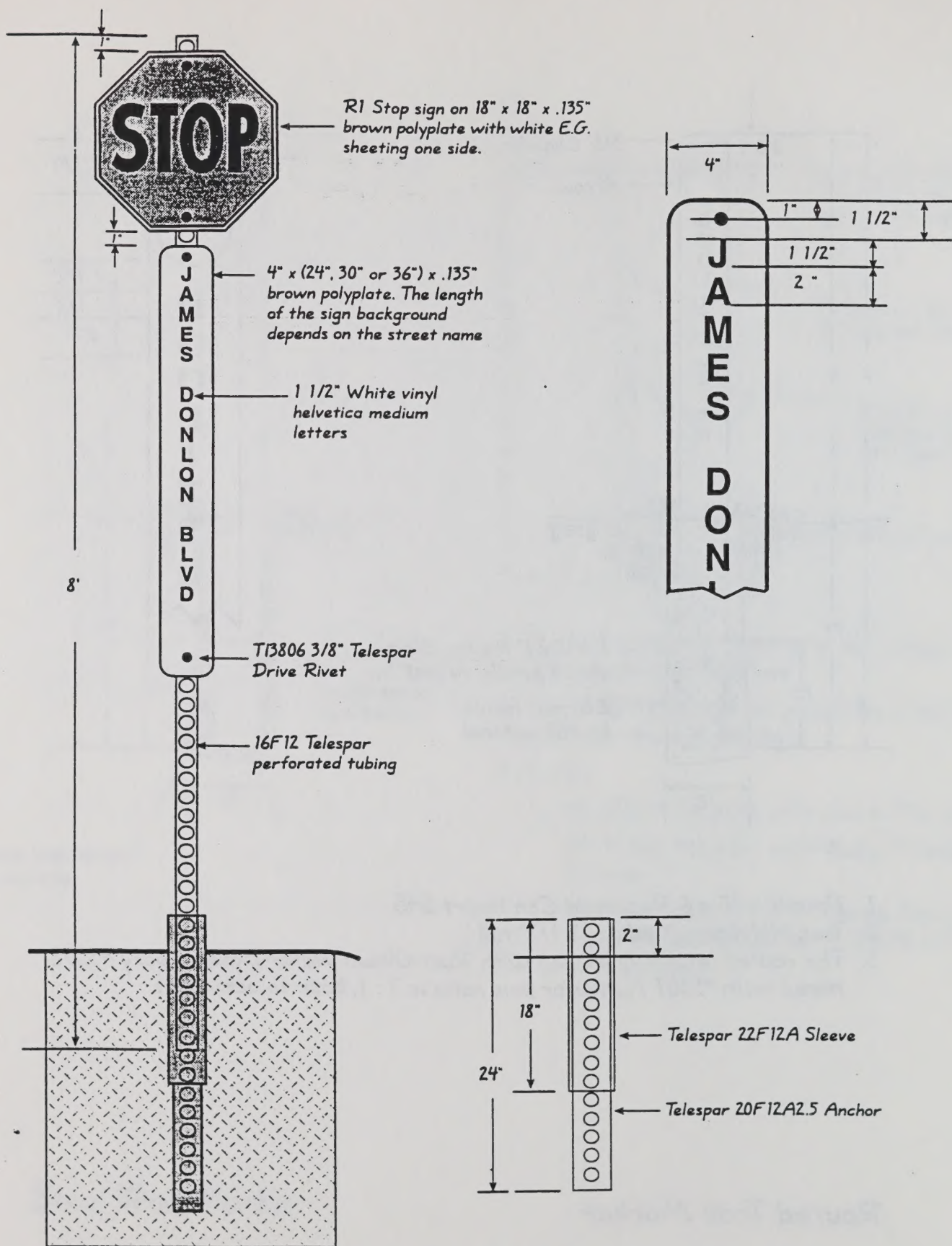
- A. Clean the post with Jasco Metal Etch
- B. Prime the post with Kelly Moore Metal Primer
- C. Finish coat of Kelly Moore Kel-Guard, Rust Inhibitive Enamel #1700-94-1277-HA Trail Brown

Steel Trail Marker



1. Post: 4" x 4" x 6' Redwood Con Heart S4S
2. Text: Helvetica Medium 1 1/2" tall
3. The routed letters are filled with Rust-Oleum Water-Based Epoxy #5392 mixed with #5301 Activator (mix ratio is 7 : 1, base to activator)

Routed Trail Marker



Telespar Stop/Street Name
Trail Marker

U.C. BERKELEY LIBRARIES



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